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Original Contributions.

FACING FOR VULCANITE DENTURES.

By J. J. Grout, D.D.S, Rock Rapids, Iowa. Read Before the Northern Iowa Dental Society, at Clear Lake, Sept. 5-8, 1899.

There are few things that cause the dentist more worry and perplexity in the making of rubber dentures than procuring a presentable facing—something which will resemble the natural gum. Gum sections sometimes in a measure overcome the difficulty, but those using plain teeth are often dissatisfied with the appearance of pink rubber as a substitute for the natural gum. I have tried nearly all the different manufactures of pink rubber, but never have been able to secure one that was satisfactory. Bleaching improves, but after you have done all that human ingenuity can suggest you have an unsightly thing. I agree in a measure with Dr. Haskell's statement: "I will sacrifice looks to usefulness every time," so I employ plain teeth almost exclusively, necessitating the use of some substance to take the place of and resemble as nearly as possible the receded gum tissue.

When our patrons have long lips and show their teeth but little, pink rubber will serve the purpose very nicely; but when they have short lips, showing much of the teeth and plate, then is when we need something that will not disfigure to so marked a degree. We can only imitate nature, never excelling her, so it is our bounden duty to devise for our patients something that will restore to them as nearly as possible their natural condition and appearance, and ofttimes we can improve on nature where she has been dwarfed or deformed.

Porcelain continuous gum work makes the ideal plate, but it is so expensive that but few feel they can afford to possess one, so we must look for some substance that resembles it, is inexpensive, and can be easily applied to vulcanite. For the past six months I have been using continuous gum facing or compound. While it

may not be the ideal facing, it has proven satisfactory in my hands. The most expert of us at times are unfortunate enough to have the darker rubber show. By using the facing these spots may be covered and made sightly without the trouble of revulcanizing. It is easily applied and when thoroughly hardened will retain its color and form, and I believe will prove durable. It pleases my patrons and consequently increases the volume of my business, which is a pleasant feature. It should have from six to twelve hours in which to harden; placing it in the sun or some warm place will hasten the process. By using aluminum as a lining and continuous gum compound as a facing, we can make a plate that is healthy, cleanly and handsome, with little expense to ourselves or our patrons.

DISCHARGE CAUSED BY TOOTH IN ANTRUM.

By W. H. Riser, D.D.S., Lansing, Ia. Read Before the Northern Iowa Dental Society, at Clear Lake, Sept. 5–8, 1899.

Last February a physician brought to my office an elderly patient who had been suffering for more than two years with pain in the right side of his face, which was considerably swollen. He also complained of a fetid discharge from the right nostril. For two years he had been in the hands of various physicians, but to no avail. All of them had been treating him for catarrh.

The physician who brought the patient to my office diagnosed the case as an abscess of the antrum, and in order that we might have free access, requested me to drill a hole through floor of same. Upon examination I found there was an opening through the floor even larger than was necessary for ordinary treatment. Further investigation disclosed something movable. The physician stated that it was a piece of bone he had separated from the maxilla in extracting the root a day previous, but he was of the opinion that it would unite again, and so did not wish me to do anything with it. I naturally did not concur in this opinion. The substance in question had the appearance of bone, and in any event had to be removed before a permanent cure could be effected.

After some little discussion I was permitted to remove the object, which was accomplished by means of an excavator and narrow-beaked forceps, and found it to be a cuspid tooth that had been lying across the opening in floor of antrum. It was slightly stained and looked as though it had once been erupted, but as it did not show

any wear one might have believed otherwise. The patient remarked that shortly before his trouble began, nearly three years ago, he went to a man traveling through the country selling patent medicines, to have the two bicuspids extracted, and was under the impression that the cuspid was taken out at the same time.

After removing the tooth I treated antrum as is usual in such cases, and in a short time had cured the case, so dismissed patient.

PORCELAIN DENTAL ART.

QUESTIONS AND ANSWERS IN A CLINIC GIVEN BY W. A. CAPON, D.D S., PHILADELPHIA, BEFORE THE MARYLAND STATE DENTAL SOCIETY, AT BALTIMORE, JANUARY 25, 1900.

Downie body when baked and worn in the mouth for some time appears to disintegrate about edges, not a mere chipping. Why, and do the high-fusing bodies act similarly? The only disintegration I have seen is the cement. I think there is no disintegration of the porcelain and have not seen it in either high or low fusing body, but what appears to be disintegration is in reality minute chipping of the edges. High-fusing bodies are less liable to this chipping, but much depends upon the edge preparation of the cavity.

Aside from glazing surface, making it a little more difficult to build body upon, what objection to fusing at each bake? There is no objection to thorough fusing at each bake, providing the color is not destroyed by too great heat.

Are the colors of high-fusing bodies as unstable as those of low-fusing? The chief recommendation in the use of high-fusing porcelain is the fact that it retains its color better and is therefore more reliable.

Give details of the "Midget" furnace and where obtained, also what cement is considered the best and freest from the two great defects—porosity and expansion?

The Midget used at my clinic to-day is made on the Bunsen burner principle with forced draught, and is capable of very high heat. It is made by a firm in Detroit, who have secured the right to manufacture from Dr. Land, the inventor. My experience with cement for inlay work is confined to two kinds—Justi's and the Harvard, both made in Germany.

Is it not your opinion that what is gained in exactness of fit in

the use of gold matrix is more than compensated by the opportunity the platinum foil offers in second burnishing and baking? The investment and gold foil do not allow this, the most important of all the steps in porcelain work, next to color. The use of gold for a matrix must be confined to a very low-fusing body, such as Jenkins' or any other kind that fuses at about 1800 degrees Fahrenheit. The investment holds it in position and protects it while porcelain is being fused. The platinum matrix does not require this care and is exposed to the heat the same as the body. Investment would be a detriment rather than of value (why?) The second burnishing of a platinum matrix is made necessary because shrinkage of porcelain has a tendency to contract the walls, particularly so if they are deep and paralleled. Small pieces of a broken porcelain tooth mixed with the body in first bake will obviate this shrinkage considerably.

Is there any advantage in investing gold matrices, save accidental change of form, with the view of preventing shrinkage? This question is answered by the last reply.

Will any investment material known to you prevent such shrinkage, which I believe is always to the centre? I do not think that investment of any kind can control the shrinkage of porcelain. I never saw a porcelain body that did not shrink during fusing, some much more than others, and with one exception there seems to be more shrinkage with the lower grades.

Is not platinum foil the very best material for matrices? I think taking everything into consideration that platinum is the very best material, no matter where it is used or what grade of filling is being fused. It is less liable to change of form in drawing from the cavity and can be fearlessly used in the hottest furnace. (Of course I bar that celebrated electric furnace at Niagara Falls that melts everything up to 7,000 degrees, just about 4,300 degrees more than is required for our work.)

Have you found any better way to anneal it than a steady glow away from the furnace? There is no better way than by heating a few minutes in the muffle, and the greater the heat the softer the foil, one of the reasons why second burnishing gives us better edges.

Do you use anything finer than the .001 foil? Platinum should not be finer than that because it breaks easier and is more liable to change of form, with no advantage in regard to joints.

How much darker do you use the color than the tooth to be matched? I use the same shade for both bakes. The color of the metal will interfere with knowing exact shade while it is in an unfinished state, so it is better to adhere to the sample color chosen.

In selecting colors when not in stock, which they rarely happen to be, to produce a proper shade or blend, do you make sample before baking or do you take a basal dark shade and then fuse a lighter shade over it? I have found the latter useful at the cervix in large fillings having two shades. It is simply impossible to be a very successful porcelain worker without the artistic tendency to mix and blend colors, therefore the name "Porcelain Dental Art" is particularly applicable to this branch of dentistry. The matching of the upper portion of a tooth frequently requires two shades and sometimes more. This will also apply to an approximal section running from neck to cutting edge.

Do you insist on a greater amount of care as to margins than in gold operations? The care is not greater but applied differently. Cavity margins for porcelain sections or inlays must not be beveled, but have edge straight and sharp so that there will be no overhang of porcelain, one cause of apparent disintegration and broadening of cement line.

Have you found it better to have porcelain even with or higher than the beveled enamel walls? It is aimed to have porcelain even with enamel walls. Slightly lower is preferable to higher both for safety and appearance. It is much easier to trim the enamel slightly without detriment to tooth or appearance than to trim porcelain to gain same results. Bobby Burns must have had porcelain inlays in his mind when he said—"The best laid plans of mice and men aft gang aglee."

Are your preparations "saucer-shaped" or with a little less than paralleled walls? Have paralleled walls if possible, saucer-shaped cavities are as little desired in this work as in any other kind of filling.

Do you prefer the roughening you mention to the hydrofluoric acid? I have never used hydrofluoric acid. Make undercuts whenever possible or roughen with corundum disks.

Do you believe the support of pins baked in the fillings as substantial as that of porcelain set well in the tooth? No, I prefer solid porcelain, both for strength of the section and attachment to the

tooth, and wherever possible I use a loop of platinum wire in preference to pins.

Do you obtain copies of cavities such as I mention, giving a good depth of porcelain entering between enamel walls? In the same manner as other cavities. Perhaps the questioner has the idea that metal matrix should cover every portion of the cavity surface; with gold it does, but with platinum it is impossible to have it so, and it is not necessary that it should.

Have you in extreme cases found copies in cement, swaged in plaster counter-die, more accurate or any help in obtaining matrices? I have never in any case had to use this means of getting a mould. My experience has proven that the only proper way to make a correct porcelain filling is to work directly on the tooth.

What is your method, in removing from cavity, of retaining pins in matrix when used without soldering, so that the foil may be readily stripped from corner to be placed? Is it reliably done by investment? The pins or wire loop are put in place before matrix is withdrawn from cavity, and are held there by a small quantity of porcelain paste, which absorb with a pellet of bibulous paper and carefully draw from position. This mode is tedious but better than investing and soldering, because even the smallest amount of solder deteriorates the porcelain, especially in high-grade material.

In that most difficult of all positions—the approximating surface of bicuspids—what is your experience as to durability of porcelain in occlusion? Shape and depth of cavity have much to do with ultimate success; plenty of space is imperative. They are the most difficult cavities of which to obtain an accurate impression and from which to withdraw the matrix.

What is your success with contour work, cutting edge and grinding surface? Excellent with contours. Cutting-edge sections depend upon amount of tooth to be substituted, a thin cutting edge is not reliable. Grinding surfaces I do not recommend, force of mastication is too great for a brittle substance like porcelain.

Why are many fillings porous at the bottom, even when solid and well glazed at the top? Overheating will cause porosity and make porcelain unfit for use where strength is the feature as much as appearance.

If trouble arises, have you any special method of removing fillings? A porcelain filling is very difficult to remove when well set,

and if some "Doubting Thomas" will try to cut one out he may become a convert.

What objection is there to keeping up the heat beyond the melting point? Overheating will destroy shade and reduce density of material.

Is the low-fusing body made by the Consolidated Company as strong for use in crown and bridgework as the higher-fusing bodies, especially as compared with the Downie? I think the strength of low-fusing material of various makes about equal, and as compared with the higher grades probably just as strong for certain kinds of crowns and bridges, providing there is considerable bulk of material.

In porcelain fillings is it always best to strip off the matrix (gold or platinum) before cementing into place? The matrix is always stripped from the porcelain, especially if the filling is small. If left on it acts as a groundwork and thereby changes the shade.

In compound cavities of bicuspids or molars is it ever well to make the filling in two sections—first, the approximal, then the grinding-surface portion? This question is asked because of the behavior of a very large compound filling I recently inserted in a lower molar. The porcelain seemed to be contracted in such a way that the gingival border of the filling and the grinding-surface end seemed to be drawn together so much that when put in the cavity after fusing only the points mentioned came in contact with the walls of the cavity. On rare occasions one may be forced to make two sections. As an illustration—the cervical margin of a cuspid, where the cavity runs from extreme mesial to extreme distal surface. The trouble mentioned in the question is liable to occur in such cavities and was probably caused by slight change in the mold when drawn from tooth. I do not recommend porcelain for such places and so answered in a former question.

DENTAL HISTORY.

By Chas. McManus, D.D.S., Hartford, Conn. Read Before the Northeastern Dental Association, at Holyoke, Oct. 17–19, 1899.

Even at the risk of being accused of monotonously descanting on a single subject, or slight variations of it, to the exclusion of more interesting papers, I shall bring to your attention the matter of a continued preparation for a history of dentistry. The "Committee on History" of the National Dental Association, after a good deal

of correspondence and consultation with members of the profession best qualified to give advice, made a preliminary report at the annual meeting at Niagara Falls last August—the curious will be able to find the report in the transactions.

It is to be hoped that a full history of dentistry may some day be prepared, and the subject will of course be considered by Section No. 6, "Teaching and History of the Dental Art," of the Internation Dental Congress at Paris next summer; but it is deemed advisable—I had almost used that popular but sneaking word, *expedient*—not to attempt too much. Earnestly as some of us desire the early publication of a history, there are several other matters of a semi-professional importance that take precedence—uniformity of laws, restraint of patents, dentists in the army and navy, a dental pathologist at Washington, reputability of college and examining boards, etc., etc.. We have every right to go slow! As Dr. Miller of Berlin wrote: "Of course a universal history of dentistry would be very interesting and valuable, but its compilation would naturally cost an immense amount of labor."

It is therefore proposed to limit the work to (1st) the accumulation of data with particular relation to the history of dentistry in America from the earliest period to the real beginning of the profession in this country, about 1840. (2d). The collection of all the interesting information possible from the older members of the profession. In reference to this feature Dr. J. Leon Williams of London writes: "There are men still living whose lives pretty well cover the whole history of dentistry in America, but with their passing away much valuable material would be irrecoverably lost."

Dr. William H. Trueman of Philadelphia, the greatest authority we have on the early history of dentistry in America, says: "I am very strongly impressed and would advise that the first effort should be made to make a history of dentistry in our own country . . . and I would begin with New England, for it was, I am persuaded, from Boston that dentistry has spread." It behooves some of us in New England to take an active part in this work, and it is with the hope of getting the members of the various state societies present at this meeting interested that I have presented the subject here, and intend later to bring it to the attention of the eastern state associations. Every state dental society—with its librarian and in many instances no library; its editorship often a sinecure; its

committee on this and that—should have a permanent *committee on history*, for history, good or bad, like the poor, we have always with us. As the state society is the real *unit* of the dental profession, so the history of dentistry in each state ought to be the unit for the full history of the profession in this country.

This was the idea at the time the World's Columbian Dental Congress took the matter in hand. State committees were appointed, a good deal of money was spent, a large amount of data was brought together, and the Publication Committee regretted that owing to the bulkiness of the work it could not be included as part of the transactions, and they expressed the hope that it might be published on some suitable, similar occasion when it could be brought down to the date of publication. I believe the time has come to make some use of that data, and I feel justified in stating that if the state societies will form responsible committees to take charge of the preparation of the local history of their respective states, the loan of that data prepared for the Columbian Congress may be obtained.

This matter is brought up before this association, not because any action can be taken here, but so that the idea may not be entirely unfamiliar to the members of state societies when it comes before them for future careful consideration.

PRESIDENT'S ADDRESS:

By Clinton W. Strang, D.D.S., Bridgeport, Conn. Delivered Before the Northeastern Dental Association, at Holyoke, Oct. 17–19, 1899.

I wish to congratulate our sister New England states on the harmonious relationship existing between the chief executives, the state associations and the examining boards. While in our own state the situation is deplorable, we can but believe that the vigorous and almost unanimous protest of the members of the state association against such intermeddling of politicians in the creation of our board of examiners, and this sentiment emphasized by a resolution passed by the National Association, will have a salutary effect upon those aspirants for honors whose chief recommendations and fitness lie along the line of political pulls.

Some one has said that a noble ancestry is an inspiration to noble endeavor, and it is true that every great nation has had its age of heroes whose splendid achievements have inspired later generations to worthy emulation. What is true in the history of nations holds

good in organizations and individuals, and with a deep sense of obligation we make proud reference to the ancestry of our Association. While the few that remain hold a warm place in our hearts, we cherish the memories of those who have joined the silent majority. If some will measure up to them in manipulative skill they do well; if a few in some respects reach a little higher, it is because "they stand upon the shoulders of great men." To-day we behold the spirit of the fathers in this generation, and the achievements in the past are an inspiration to greater attainments, which is apparent in all the activities pertaining to dentistry.

It seems to me, however, that so much has been done to train, educate and prepare young men for professional duties proper, that too little thought has been given a very important subject—one which confronts them at the beginning, is ever before them, and will remain to the end, yet how few suggestions are offered along this line, each student being left to work out his own destiny with fear and trembling. Dentists as a class are poor financiers, and it is probably due to the fact that in their early business career they are not subjected to the same training as the young man who enters a mercantile or manufacturing establishment, where the question of cost is scrupulously studied before the goods are put upon the market. Futhermore, from time to time the young dentist is cautioned against the danger of allowing himself to be influenced by mercenary motives. From a professional standpoint duty to his fellow men should prompt him to do the very best, regardless of any monetary consideration. From the philanthropist's standpoint these sentiments are beautiful, but we fear the indiscriminating have been led into the error of divorcing true business methods from their work.

It costs the young man several years' time and a large sum of money to become skillful in dentistry, and such preparation deserves proportionate remuneration in practice. The methods as generally followed at the present time are not calculated to educate public sentiment to give a just remuneration for professional service. While in all the large cities and good-sized towns there are to be found positive men, conscious of their ability, who can accomplish their ends, whatever be the plan of adjusting fees for service, the majority of dentists are following the old beaten track. Practically this means that the class of patients who are favored with good dentists, and who systematically take care of their teeth, help pay

the bills of those who though by nature equally well favored, are neglectful and unsystematic—recipients of skill and time without giving an equivalent for the same.

We believe the dental operator should regulate his charges according to the time required for a given operation, whether it be for an examination, for cleaning teeth, treatment, filling, or making a plate, and this system conscientiously adhered to will result in an equitable adjustment of fees for professional services. Why is it that the patients of so many dentists are suffering the premature loss of teeth and all the attendant discomforts occasioned by foreign deposits? Not altogether because that particular kind of work is not so fascinating as fillings, but because the established fee for that operation in most localities is so low that the work cannot be done properly without great sacrifice on the part of the operator, and the same principle applies to every department of dentistry. There are throughout our land to-day a host of men, educated and of ability, who have for many years been putting goods upon the market far below the cost of production, and this is evidenced by the approach of declining years and a financial condition sometimes worse than what it was before a practice was established. No man with a fair practice and good health has any moral right to reach middle life without having accumulated a substantial bank account. While to accomplish this may call for sacrifice along certain lines and a rigid adherence to business methods, it does not necessarily entail the sacrifice of a single one of those principles which combine to make a noble and self-respecting manhood.

As a profession we are still in our youth, but the time is upon us when, if we would stimulate the coming generation as we have been inspired by the past, it must be along the line of endowed literary institutions. Are we preparing to meet the obligation?

ELECTRIC ROOT DRIER AS AN AUXILIARY STERILIZER OF PULPLESS TEETH, AND LACTATE OF SILVER IN THE TREATMENT OF ALVEOLAR ABSCESS.

By H. W. Moore, D.D.S., Santa Barbara, Cal. Read Before the Southern California Dental Association, at Los Angeles, Oct. 3–4, 1899.

Much has been written within the last thirty years upon the treatment of pulpless teeth, and the histeological researches and experimental investigation pertaining thereto; yet the field is by no means

entirely explored, so remains a most interesting and profitable topic for discussion and investigation. Looking back it would seem that the progress made in this particular work dates from two distinct periods; first, the discovery of the part bacteria take in dental pathology, and its practical application to dental therapeutics (here it was that Miller laid the scientific foundation of dental disease, which has been so aggressively investigated by many others ever since, to result in more thoroughly establishing Miller's conclusion) second, the discovery of germicides specially applicable to dental use, and the invention of the electric root-drier, for the efficiency of this instrument in furthering the sterilization of pulpless tooth-structure cannot be overestimated. Heat is by far the most effective and reliable means of completely destroying bacteria, or of rendering them incapable of producing either their soluble diffusable poisons or noxious gas. It is to these products that in the light of experimental evidence it is safe to attribute all inflammation and suppuration resulting upon death of the pulp.

Dentin is extensively invaded by a soft plasmic material derived from the pulp by which it is nourished; this substance and temperature together offer a most favorable culture medium for bacteria. Now if these bacteria are not either destroyed or rendered harmless, what becomes of their poisonous products, provided the pulp-canal is thoroughly filled? Must they not necessarily pass off through the cementum, finally to be absorbed and eliminated by the adjacent tissues? and would not such a disposition of them most seriously interfere with tissue metabolism, resulting finally in an enfeebled condition of cells; and for relief would they not call out for mercy in the form of acute inflammation?

To render aseptic the interior tubular structure of an infected pulpless tooth is one of the most scientific, as well as difficult and uncertain operations, which confronts the dentist. This is due to comparatively inaccessible tissue becoming infected, which must be rendered absolutely aseptic, otherwise it matters not how skillfully the balance of the operation be performed, the whole operation must remain but a limited protection against early disintegration. Make it possible to apply without injury reliable chemical germicides, or germicides with great diffusability, to the utmost limit of the dental tubules and apical extremity of the pulp-canal; then thoroughly dry up the contents with an electric root-drier, thus removing all possi-

ble source of irritation of surrounding tissues from bacterial poisoning, and nature will assert herself. We shall then probably discover it to be one of the inherent physiological functions of cementation to guard against further invasion of bacteria by throwing up defence of the character of neoplasm in all channels of communications existing between vital and devitalized tooth-structure. However, is it not just to say that while dentists as a rule are admittedly progressive, they are not as yet governed in sterilizing infected pulpless teeth by an adequate knowledge of how scrupulously careful it is necessary to be in the observance of every possible antiseptic precaution, if the ultimate aim is to secure a condition which would be considered surgically clean by an expert.

No more forcible lesson can be taught a dental student of the absolute importance of cleanliness, and how difficult it is to be so from a surgical standpoint, than to have practical experience in bacterial culture, and I trust bacteriology will be made a more important feature in the dental students' curriculum than it has been heretofore.

Is it not a common practice with dentists, after having secured what seemed to be perfect sterility of a pulpless tooth-canal, to explore for further moisture with paper cones, made by rolling unsterilized bibulous paper between unsterilized fingers, it never occurring to them that they are employing most excellent means to infect the parts which a strenuous effort has been put forth to disinfect. Prove this statement by making the following simple test for bacterial growth: Take a boiled potato, cut it in half with a sterilized knife, then place it in a sterilized tube, with a sterilized cotton stopper; now after having prepared the bibulous paper cone by the usual method (between the fingers), take out the cotton stopper from the sterilized tube and simply touch the potato in the tube with the paper cone held in a pair of sterilized pliers; withdraw the cone, replace the stopper and set away the tube for about two days in a warm place; at the end of this time you will in all probability find a growth of bacteria on the potato so large as to be quite visible to the naked eye. This is what is called a colony, and it is just such colonies that play the mischief in pulpless teeth; hence the absurdity of using such unscientific means of testing for moisture; especially when this moisture, with the accompanying temperature, is an excellent culture medium for bacteria.

While we are aware that in the treatment of bacterial lesions it is bacteria-metabolic product we have for the most part to combat, we are also aware of the fact that numerous investigations have demonstrated that dead bacteria of many different species give rise to suppuration when injected subcutaneously, hence the importance in our manipulations of being exceedingly distrustful of forcing the minutest particles of foreign matter through the apical opening; for in such an event we may possibly be laying the foundation for future complications. It would therefore seem wise for us to keep the broach well within tooth-structure until this field is more fully explored. Too great precaution cannot be exercised in the treatment of infected teeth, for the reason that the intricate character of tooth-structure, their locations, various shapes and tortuous canals all contribute to make it very difficult to know at what particular stage of treatment absolute sterility has been secured; and still more so when we add to this the great resisting power bacteria have to chemical agents.

Let us see what accepted authorities say about this: Miller says—"If we wish to be sure that we have completely sterilized a layer of dentin with carbolic acid, for example, we must allow the solution to act at least three-quarters of an hour; nor does it suffice simply to moisten the surface with the acid, the whole cavity must be thoroughly bathed with it; simply wiping a cavity with carbolic acid and immediately drying it gives no guarantee whatever that any softened dentin present has become sterile."

Koch found that microorganisms were destroyed by different solutions of carbolic acid in the following order: A one per cent solution after fifteen days exerted no remarkable action; after seven days in a two per cent solution the spores were still active; when mice were inoculated with them a four per cent solution killed on the third day, and a five per cent solution killed with certainty on the second day.

Abbott says that a 1-1000 solution of sublimate does not always destroy staphylococcus aureus in fifteen minutes.

It should be remembered that these are laboratory tests with pure cultures, where every germ comes under the influence of the germicide. In a carious tooth the bacteria are entangled in foreign matter, which the disinfectant penetrates with great difficulty; there is probably also considerable moisture present to weaken the solu-

tion, hence it would appear that the time given to sterilize and mummify the infected tissue of pulpless tooth-structure in the treatment known as immediate root-filling is in many cases entirely inadequate.

To work in line of experimental evidence we must realize that we have an organism to destroy that is remarkably tenacious of life. We know also that these organisms are distributed throughout a tissue which is penetrated with great difficulty even with germicides of great diffusability, therefore it would seem much the wiser plan to repeat at different sittings the sterilizing and drying until there is satisfactory evidence that the best results have been secured.

A number of cases of persistent peridental inflammation have fallen into my hands within the last two years, and I have been remarkably successful in the treatment of them, which I attribute largely to the careful use of the Russell electric root-drier. The teeth treated were of such character that heretofore I would have had from time to time to remove the root-dressing because of persistent sensitiveness upon chewing, making fresh applications which relieved only for a short time. I might say that after thoroughly sterilizing and drying by other methods I am able with the root-drier to drive off moisture freely and visibly.

I have experienced much benefit from lactate of silver in the treatment of chronic abscess at the roots of teeth, succeeding with it where other remedies have failed. My mode of treatment is to take one part of the powder and 500 of water, then with a hypodermic syringe force the solution through the fistulous opening well into the abscess. I believe this will prove to be a valuable remedy in dental therapeutics, not only in lesions such as I have mentioned, but in others of bacterial origin which come within the province of the dentist to treat. Experiments seem to have shown that silver forms a lactate with the lactic acid produced in the metabolism of the microorganism, and this compound kills them. An abscess opening into the mouth is a perfect incubator for all kinds of bacteria, and if silver and its preparations do what is claimed for them, they certainly have a large field of usefulness here.

Citrate of silver, in the hands of the general surgeon, seems to be quite as efficient as lactate; one part of the latter is soluble in fifteen of water, the former is soluble one part to 3,800 of water. I have had no experience whatever with citrate in the treatment of dental

lesions. The one disadvantage in the remedy is that the solution must always be prepared fresh, as it deteriorates very rapidly under the influence of light.

Discussion. *Dr. A. H. Palmer, Pasadena:* I am not a believer in the practicability of heat as a sterilizer of pulpless teeth, because of the comparatively low degree that can be borne by the patient. T. Lauder Brunton says a temperature of 66 to 70 degrees C usually *arrests* the movement of bacteria, and if *continued for an hour* destroys adult organisms though not spores. A temperature of 100 degrees C (212 degrees F) usually destroys spores as well, but this is not always the case. Globig finds that spores of a particular species of bacteria belonging to the class of potato bacilli are destroyed by steam at 100 degrees C in 5½ to 6 hours, by steam at 110 degrees C in ¾ of an hour, at 113 degrees C in twenty-five minutes, at 120 degrees C in ten minutes, at 126 degrees C in three minutes, at 130 degrees C in a moment. These tests are verified by Koch. The patient can take his choice of a temperature of 100 degrees C (212 degrees F) for 5½ to 6 hours or a temperature of 130 degrees C for a moment. But if dentin is extensively invaded by a "soft plasmic material carried from the pulp," as Dr. Moore has stated, and if "this substance offers a favorable culture medium for bacteria," it stands to reason that a sufficient amount of heat must be used to render the substance sterile—or if we admit his claim that drying sterilizes (which is not a fact), the Doctor must generate a sufficient amount of heat with his root-drier to dry the substance.

What would be the effect in a root-canal of a sufficient amount of heat to sterilize it? First, the length of time a patient can stand a heated wire would be so infinitesimal that a mere charring of the surface it comes in contact with, a sealing up of any pathological bacilli in the adjacent tubuli, and the gate is merely shut and the barn door left open for them to "pass off through the cementum, finally to be absorbed and eliminated by the surrounding tissues." Your "patient's cells certainly would call out for mercy," if *he* did not, and the resulting inflammation would probably be as great, or greater, than if no drying had been attempted. To dry a root-canal does not of necessity sterilize it, neither is it possible to so dry a canal with the tubuli still moist as to accomplish what the essayist claims. It is a well known fact that tubercule and many other

forms of bacilli are not destroyed by drying; and such being the fact, the general proposition that any form of root-drier can sterilize a canal with the amount of heat that can be borne by the patient must be a delusion.

Much better results can be obtained by placing what bacilli or spores are present in a condition of "innocuous desuetude" by using some good antiseptic, such as a solution of formalin, or any suitable antiseptic sealed in the canal and left for a sufficient time to do its work, repeating the operation as many times as may be necessary, than by attempting to sterilize the canal with any form of drier, even admitting that sufficient heat could be used, which I do not believe, leaving devitalized material that would surely be invaded by moisture and thus become a favorable culture medium. It is better dentistry to sterilize the canal with suitable antiseptics, leaving it moist with the solution to prevent the future growth of spores or bacilli.

SALIVARY CALCULUS FROM THE SUBMAXILLARY GLAND.—S. H. Dessau reports a case in which the condition suggested some slight suspicion of Ludwig's angina. Suppuration and spontaneous rupture occurred, followed by recovery. The calculus was passed from Wharton's duct and measured eleven-sixteenths by twelve-sixteenths of an inch.—*Med. News.*

GELATIN AS A HEMOSTATIC.—Bauermeister (*Med. Press and Circular, Jan. 1900*) reports a case of almost fatal epistaxis cured by injections of a solution of gelatin. A woman, aged sixty-eight, bled so profusely and continuously in spite of all ordinary measures that half a liter of physiologic solution had to be injected subcutaneously. The following treatment was then carried out: Syringing of the naval cavity with warm saline solution to get rid of crust and blood-clot; then twenty to thirty grams of warm fluid gelatin was introduced into the nose by means of a glass syringe with a wide nozzle, the alæ nasi being pressed upon the nozzle in order to prevent the gelatin at once running out again. After removal of the syringe the gelatin hardened quickly and the bleeding was arrested at once. He also reported a series of successful instances of the use of gelatin as a hemostatic. He used the gelatin internally in ten-per-cent solution in three cases of hemorrhage from the gastrointestinal canal, also externally in the form of tampon soaked in gelatin in several cases of epistaxis in which plugging had been unsuccessful, and in one case of profuse bleeding from the uterus, always with prompt and good results. In only one case—hemorrhage from the lungs—did twenty to thirty grams of gelatin daily fail to arrest the bleeding. The writer believes that it undoubtedly facilitates coagulation, and then when applied on the surface it can do no harm. As to its subcutaneous employment he acknowledges that not enough is yet known of its possible danger to encourage one to make a trial.

Digests.

CERVICAL GLANDS. By Dr. Carl Schleich, Berlin. Inflammatory irritation of the ganglia in the submaxillary region and in the cervical fascia involves a fusion of the glandular capsule and periglandular tissue with the large vessels of the neck, and the possibility of death by hemorrhage plays a great part in total extirpation of the cervical glands of children. Pathology shows, however —and clinical experience is corroborative—that pure inflammatory hyperplasia without suppuration may by appropriate diet and certain medication be influenced in the direction of resolution; even when such hyperplasia has persisted for many months. A submaxillary ganglion which has become enlarged through some form of dental irritation can persist for months as a tumor the size of an apple—painless, movable and devoid of superjacent reddening or fever—and may finally undergo absorption through fatty degeneration. As the various forms of regressive metamorphosis which the glands may undergo fall under three heads, viz., fatty degeneration, caseation and suppuration, our therapy must be based upon recognition of which one of these terminations is likely to occur. Strict observation of the general condition of our patient may often enable us to determine this question.—*Pediatrics.*

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MALARIA. The Liverpool School of Tropical Diseases has issued "Instructions for the Prevention of Malarial Fever; for the use of Residents in Malarious Places." The causes of malarial fever are explained to be due to the presence of certain minute parasites called hemamebide in the corpuscles of the blood. In order to produce an attack of fever about 250,000,000 parasites must be present in the body, while in severe cases a billion or more may be present. In sufficient numbers they may be easily detected with the aid of a strong microscope in a drop of blood drawn from the patient by pricking with a needle. The sudden rises of temperature which occur in this disease, and which are accompanied by shivering (ague), are due to the parasites scattering their spores in the blood fluid. The parasites grow up together and scatter their spores simultaneously, causing an immediate rise of temperature and shivering. After a variable number of attacks of fever the parasites may largely

decrease in number, leaving the patient free from fever for a time. At any moment, however, the number of parasites may increase again, either spontaneously or through the patient's exposure to the rays of the sun or to chill or fatigue. Between the relapses the parasites continue to live in the patient in comparatively small numbers. After they have become extinct no relapses will occur, unless as the result of a fresh infection. Quinin kills the parasites. All parasites or their eggs pass in some way or other from an infected individual, animal or plant, to a healthy one.—*Lancet.*

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SLIDING COVER FOR TUBE IN THE TREATMENT OF THE ANTRUM. FLAME-SHAPED DRILL WITH SHORT, KNIFE-LIKE POINT. By Dr. Eugene Wunsche, Dresden, Germany. In the frequently long and tedious treatment of the antrum we generally lack a simple and convenient cover for the opening made by the operation. For a long time I have been using for this opening a flame-shaped drill, with a short, knife-like point. The little chisel at the extreme point cuts readily through the bone, and the fine blades of the fine flame-like drill head work smoothly, without causing great concussions. Access to the antrum having been obtained, an impression is taken with gutta-percha, after which we make a twenty-two K. gold tube with a diameter of 0.6 mm. The tube is fitted on and an impression taken over it in order to get the necessary length and exact position.

The sliding cover is made in the following manner: A piece of gold plate is taken 0.25 mm. thick and one cm. square, the four sides of which are turned up 1 mm., the four corners soldered together and a hole made corresponding to the tube. On the side where the slide is to be introduced an opening is filed for a suitable plate upon which, after being inserted, a little projection is soldered in the middle of the end inside the traverse. The other end is bent up at a right angle 1 mm. to furnish a good hold to the finger-nail when the slide is to be opened. This device is soldered to the tube, and the latter either vulcanized into a small prosthetic piece or soldered to a small piece with two clamps, according to the exigencies of the case.

The patient can open the slide easily and introduce a pipe fitting into the tube, and connected with the rubber tube of a syringe, or better still, an irrigator (atomizer) for a slight rinsing. The slide

works easily and conveniently, and the apparatus prevents irritation of the wound. The cover itself is clean and tight. The use of a convenient and well-fitting cover for the antrum, preventing as much as possible an irritation of the wound, contributes greatly to a speedy cure.—*Items, April, 1900.*

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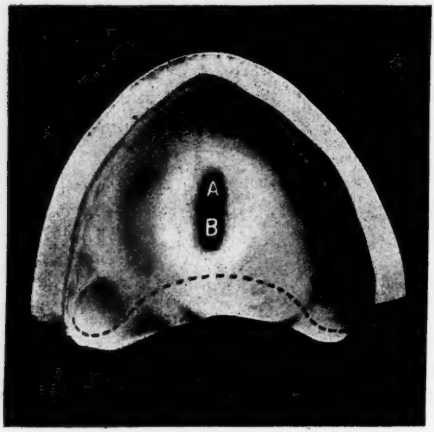
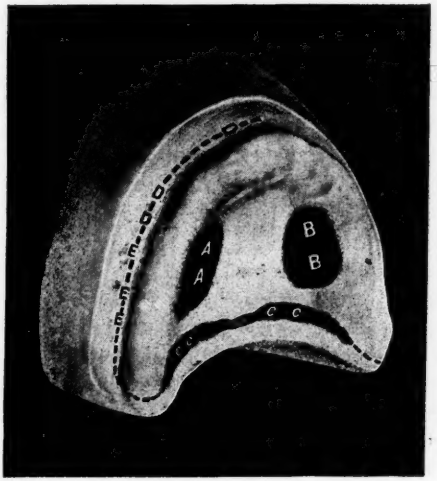
ADAPTATION OF ARTIFICIAL DENTURES. By J. Clarence Salvas. D.D.S. In the realm of prosthetic dentistry there are few factors requiring as much skill and scientific thought as the adaptation of artificial dentures. The success herein obtained depends on



the attention given to details. To take an impression and send it to the laboratory without examining the character of the mouth, and without treating the impression and cast as existing conditions may suggest, is to violate an important principle which renders the attainment of successful results very doubtful. Though success is often obtained regardless of any attention given these points, such success may generally be attributed to the presence of the "vacuum chamber," by which certain inaccuracies of workmanship are often obliterated.

The "vacuum chamber" and its various modifications, which have been in use for over half a century, has been and is to this day regarded by many in the profession as an indispensable, or an infal-

lible factor in obtaining satisfactory retention. In this connection its value is certainly overestimated, as the idea of establishing a vacuum of any permanency in the mouth is obviously an absurdity. Its efficacy as such is analagous to conditions produced in the glass-tube experiment, in which, by exhausting the air and applying the tube to the lips, the tissues will be drawn in with sufficient force to support the tube until it drops off, owing to the air yielded by the tissues upon which the vacuum acts. This is exactly what takes place in the case of the denture, and conclusively shows that its utility is but transitory; in other words, that it sustains the plate



until a more or less perfect adaptation is secured, its permanent retention being due to adhesion; and there is no kind of a cavity or space which secures such permanent adhesion and gives so complete a vacuum as perfect contact. A consideration of the parts involved must convince the observer that the tender, sensitive tissues cannot long tolerate even a partial vacuum. Instances are not wanting where a vacuum, even slight in degree, has been attended by decided pathological results.

The natural law governing the phenomenon of adhesion, that two perfectly fitting surfaces with an intermediate fluid will adhere with

force equal to nearly two pounds to the square inch, independent of the atmosphere, is the basis on which artificial dentures should be constructed. To obtain permanent adhesion, absolute contact and uniformity of pressure is a preëminent requisite, and may be secured by preparing the impression and cast in a manner to compress the soft and thick portions of the alveolar ridge and hard palate, and by relieving the pressure on the hard, protruding, bony surfaces characteristic of the palatal ridge. The strength of the adhesion is influenced in a great measure by the conditions of mouth, that is to say, a plate in a small, rigid and dry mouth will hardly sustain five ounces of displacing force; while a plate in the same mouth if moist and comparatively yielding will sustain ten to fifteen ounces.

Previous to constructing a denture the mouth must be thoroughly examined. The importance of this cannot be overestimated. With the finger or blunt instrument note the conditions of the tissues where they are hard and rigid or soft and flexible, also where they are very tender. Ascertain approximately the depth to which the soft tissues will yield, as the amount to be scraped from the impression and cast depends on the relative hardness and softness of the tissues.

The accompanying figures serve to illustrate the method of preparing the cast and impression of a mouth, the tissues of which are uniformly rigid. In this case the palatal ridge is hard and prominent, but has on either side a small area of soft, yielding tissue. Pressure of the plate on the posterior two-thirds of the palatal ridge is relieved by scraping the impression at points shown in Fig. 1, A, B. Fig. 2 represents the cast, with shaded parts corresponding to the soft tissues, where compression is desired. To affect this the cast is scraped at points indicated by AA, BB, CC, CC.

It is important to have the plate line as high as possible, especially over the cuspid prominence, and the cast should be scraped along the plate line where the tissues will permit. Fig. 2, DDD indicates the points where greater compression is secured, while EEE represents the very tender surfaces that will tolerate but the slightest compression. It is a common error to allow the denture to fit too close on this portion of the alveolar ridge, and it is equally inexpedient to reduce the plate to a knifelike edge which invariably lacerates the tissues.

A denture constructed upon this principle will require several days'

wearing to become perfectly adapted. The plate will then be in absolute contact with the mouth, and with more positive pressure on the yielding parts, and through the agency of the fluids between the plate and mouth, adhesion is attained. The impression of a uniformly rigid, flat mouth needs but the slightest modifications to produce a perfect fit. It is therefore clear that the essential feature of this method of adapting artificial dentures is absolute contact and uniformity of pressure, the former secured by a perfect impression, the latter by means above described.—*Brief, May, 1900.*

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WHAT SHALL WE EAT AND DRINK? HOW? AND WHEN? By A. D. McConachie, M.D., Baltimore. Read before the Union Meeting, at Washington, June, 1899. The philosopher Feuerbach spoke truly when he said, "Man is what he eats." This axiom should be made to embrace what he drinks. Theoretically this truth is widely appreciated, but very much neglected in every-day practice; not only by the unprofessional but by physicians. Eating too much, or unsuitable food at unsuitable times and manner, is the chief cause of the host of discomforts called by various names—indigestion, biliousness, dyspepsia, heartburn, etc. Doubtless more suffering is caused by avoidable errors in eating than by the use of alcoholic beverages, enormous as the latter is.

Our food-supply and mode of using it having, then, so much to do with individual health and length of life, let us take a survey of its essentials. A rational system of dietetics should begin with the children of the rising generation in order to fully understand its influence on growth, development and health. In attempting to reform confirmed transgressors our efforts are largely misspent and a fair test of its merits cannot be had. We cannot overestimate the importance of a properly regulated diet. It is essential to maintain perfect health, to prevent disease and to help nature cure disease when once established. This to me is one of the most important subjects connected with the science of medicine, the perfect regulation of diet most conducive to the above conditions. Our greatest possibilities for success, medical and surgical, lie in the successful regulation of the diet. Hence we should be complete masters of its details if we are to cope successfully with the problems of health and disease. Therefore we should have exact physiological knowledge and a clear conception of the chemical composition of all food-

stuffs, their capability of digestion, and the mode in which they are appropriated by the animal economy.

Let us briefly review some important physiological facts and the process of normal physiologic digestion before going into the details of the various foods and drinks. The body is an aggregation of cells, each one a minute mass of protoplasm which has the property called life, life manifesting itself by various functions, as reproduction, nutrition, growth, etc. Each cell therefore has a life history of its own. It grows, fulfills its mission, produces other cells, wastes away and dies. In its life processes waste is created, hence the necessity of food-supply or existence would cease. If the food-supply equals the waste there will be no apparent change. If the supply is less than the waste existence may be prolonged, but must finally cease; if it exceeds the waste there will be an increase in growth. To keep the body in perfect condition the quantity and quality of food should be such as best supplies that which is worn out. Nature furnishes the infant at birth the food-milk which is typically perfect. The infant finds in milk all the various elements necessary for sustaining life, growth and upbuilding of the tissues in the right proportions. Other foods may be successfully substituted if we keep in mind the exact composition of the typical food furnished by nature. A knowledge of physiology will enable us to select that kind of food which is demanded by the age, condition and temperature.

The first step in physiologic digestion is the mastication of food; thus the food is comminuted and admixed with saliva and mucus; the carbohydrates, as bread, mush, potatoes, etc., are thus partially digested, changed into sugar, moistened, and thus rendered more easy to swallow. The next important chemical process goes on in the stomach, where it encounters the gastric juice—hydrochloric acid, pepsin and rennin—and the proteids are transformed, at least partially, into peptones after passing through various preliminary stages; the muscular movement of the stomach facilitating the process by its churning action, and propelling the contents into the duodenum for further digestion. Very little absorption takes place from the stomach. In the duodenum the food comes in contact with the pancreatic and biliary secretions, which complete the digestive processes in the proteids, starches and fats.

These chemic changes completed, the converted food is absorbed

by the circulation and the lacteals; the *débris* or indigestible portion passing into the colon forms the body of the feces. The entire alimentary tract is the haunt of various forms of bacteria, some of which give rise to fermentation and putrefaction. These are carried down with the food.

All food-stuffs are derived from either the vegetable or animal kingdom, the latter coming primarily from the former. Foods are usually divided into organic and inorganic, a very convenient subdivision being to divide the organic into, first, nitrogenous; this includes substances consisting of proteid, as albumen, casein, myosin, gluten, fibrin, legumin, etc.; second, non-nitrogenous, further divided into (1) amyloid and saccharine bodies, usually called carbohydrates, as starches and sugars; (2) oils and fats, substances containing carbon, oxygen and hydrogen, the oxygen being less in amount than in the carbohydrates. Inorganic foods are those which furnish the system with the required salts and water. It then makes little difference whether foods come from the animal or vegetable kingdom, as they all contain three classes of chemical substances, water and the inorganic salts; the heat and energy producers, as starch, sugar and fat and the proteids, tissue-builders.

In dietetic literature we find many misleading statements, due largely, I think, to a faulty knowledge of the chemical composition of foods. The opinion that the vegetable class contains only starch, sugars, water and salts, to the exclusion of proteid elements, largely prevails. This is a mistake, for it is well known that all vegetable foods contain a goodly proportion of the proteid class. Again, some think that the animal class is composed purely of proteid substances. These opinions and statements are misleading. The truth is that all food, whether vegetable or animal, contains all three classes of chemical elements—water and salts, heat producers, and muscle-forming materials—but the proportion varies.

Sugars and starches are always found in excess in vegetables; fat is always in excess in the animal as compared with the vegetable food. Therefore the selection of a dietary does not lie in excluding any one class of food—e. g., becoming carnivorous or herbivorous—but to unite the two in our dietary so that we may secure the proper quantity of the inorganic matter of the sugars, starches, fats and proteids, and yet not have an excess of the one group as compared with the other.

The utility of the three classes of foods in the economy should be borne in mind. The proteids are the true tissue-builders. They enter the alimentary canal as animal or vegetable proteids and are there transformed into peptone, after passing through various stages from alkali-albumen to acid-albumen, to albumoses and peptone, a condition necessary before it can be taken up by the epithelial cells lining the alimentary canal; only a portion of the proteid material, possibly one-third, is so changed in the stomach, the remainder passing into the duodenum, there to be acted upon by the trypsin of the pancreatic secretion and the proteolytic ferments of the bile and intestinal secretions. The peptone being taken up by the epithelium of the intestinal wall, it is altered and passed on to the entero-hepatic circulation; not as peptone, but as serum-albumin, serum-globulin, or fibrinogen. In normal conditions peptone as such is not found in the entero-hepatic circulation. After these proteids are passed on through the liver they are taken up by a process of absorption and changed to form the various tissues and glands of the body. Water and the inorganic salts are purely mechanical in their action as they pass through the system, entering and leaving the system unchanged in composition. Starches, sugars and fats are readily oxidizable and are easily changed within the system. The sugars, those taken in as such, and starches converted into sugars, are oxidized in the liver cells into carbon dioxid and water, with the development of heat as a product. The heat thus generated reflexly stimulates the nervous system. Fats are oxidized, being first emulsified and saponified and absorbed, in the pulmonary circulation, giving rise to heat, which again stimulates the cerebro-spinal nervous system. It is from the proteid class that all the damaging toxins of food arise.

We have thus noted the composition of food-stuffs; let us now look at the digestibility of animal as compared with vegetable food. It has been indisputably proven by experiment that animal foods are more easily digested than vegetable, milk, eggs and beef being the most readily so of all foods in use, with a minimum of residue (three to six per cent) remaining undigested. Hence in health or disease these are the most valuable foods. From twenty to seventy per cent of all vegetable food passes through the alimentary tract undigested. The vegetable foods more readily undergo fermentation and putrefaction. Our preference therefore from a digestive

and non-fermentative standpoint should be in favor of animal foods.

In selecting our foods we should also bear in mind to secure the salts and water—heat producers and tissue formers—in proper proportions. We find this proportion more nearly perfect in the animal food. In milk we find the proportion perfectly arranged for infant life. In youth and adult life, when employment and much activity is required, we need to increase the tissue-forming food—the proteids—hence bread and butter must be added to make it approach the proper proportion of constituents.

The strong objection to animal food is that it is defective in nucleo-albumin, an essential element in the composition of red blood-cells and for the supply of lecithin to the nervous system. Therefore an exclusive animal diet is apt to produce an anemic condition; so some cereal food should be added to the animal diet to supply the nucleo-albumin which gives to vegetable food its chief advantage, beside which its bulk gives the intestine something to contract upon. The great disadvantage of the vegetable foods lies in the quantity of starch and sugar they contain. These undergo fermentation and putrefaction, with formation of innumerable toxins to be absorbed into the circulation. It is then evident that we cannot consider the vegetable or animal foods alone as ideal foods. We must blend the two to secure the proper proportion of the three classes of food required.

We, in contrast with other nations, are called a nation of dyspeptics, due largely to the American tendency to live largely upon vegetable food, including fruit, and rich and highly-seasoned dishes. This error is responsible for the origin of seventy-five per cent of our diseased conditions. The excessive use of fruit, raw, cooked or preserved, for its so-called laxative effect is a serious error in our dietary. True fruit is laxative, but not due to its biliary stimulation and an increased production of glycerol and soap in the intestinal canal, but to its fermentative and putrefactive action; hence acts as an irritant and causes its expulsion through increased intestinal peristalsis, and the patient is deluded because his bowels are moving freely; the putrefaction and fermentation increasing, producing toxins to be absorbed and work their damaging effects upon an already damaged nervous system. Not only the excessive fruit-eating propensity is disastrous, but our irrational method of taking

fruit is in defiance of physiological teaching. The breakfast at hotels and in most private families begins with fruit, usually very acid kinds, as apples, oranges, grape fruit, grapes, etc., followed by some sort of cereal, mush, farina, wheatina, etc., washed down with milk or cream, and with scarcely any admixture of saliva, whose ptyalin should at least partially dextrinize the starch in the mouth. Saliva is the only fluid that digests starch until it reaches the intestines. The digestion of starch in the stomach is retarded or arrested by very small percentages of acids, either the normal stomach acid, hydrochloric, or organic acids derived from fruits; the former, according to Ewald and Boas, arresting starch digestion by twelve per cent presence and retarding by .07 per cent. Chittenden says that .003 per cent stops starch digestion. The organic fruit acids, according to Ewald and Boas, are credited with a decided power of inhibiting the digestion of starch in the stomach, though less than that of hydrochloric. Fruits, then, when eaten should be eaten alone or at the end of a meal, when starch digestion has been partially completed. Condiments and highly-seasoned articles of food can be considered in their effects and uses in the same category as stimulants in general, as tea, coffee and alcoholic beverages, which we will now consider briefly.

It is generally conceded that tea and coffee in immoderate quantities impair digestion, and slowly produce abnormal digestive and absorptive processes. This is largely due to the stimulating principles therein, thein of tea and caffein of coffee, combined with the deleterious action of the contained tannin on the mucous membrane. Excepting for the water and salts ingested in tea and coffee drinking the food value is practically nil.

Regarding the food value and digestive effects of alcoholic beverages there is quite a wide divergence of opinion. Formerly it was the prevailing opinion among physicians that alcohol in moderate amounts was a food and aided digestion, but the careful, painstaking and accurate investigations of recent years have demonstrated the fallacy of that opinion; and at the present time the majority of physicians who have made a careful study of the subject are convinced that alcoholic beverages not only do no good, but are positively injurious to digestion, absorption, assimilation, and oxygen-carrying power of red blood-cells. Dr. Chittenden says: "One tablespoonful of whisky, fifty per cent alcohol, reduces digestive

activity seventy-five per cent." Dr. Richardson of London says: "Nothing more effectually hinders digestion than alcohol." Dr. Kellogg says: "Nothing could be farther from the truth than the popular notion that alcohol, at least in the form of certain wines, is helpful to digestion." These and many more opinions of similar import could be quoted to prove that alcohol not only has no food value, but seriously retards digestion, especially the proteids, and thereby seriously impairs the nutrition of every tissue and cell of the body. The muscular power is reduced, mentality is interfered with, the special senses are reduced in acuity and activity; hearing reduced, acuity of vision lessened, the sense of taste obtunded, the sense of smell blunted, the pain, heat and touch senses materially impaired.

What, then, shall we eat and drink? From birth on the diet should be carefully regulated, always keeping the animal class of food in excess of the vegetable, adding sufficient of the latter as soon as it can be tolerated by the digestive apparatus. It is an every-day experience to see infants who have thriven upon the breast milk or modified animal milk during their first year suffer much from digestive disturbances when that period has passed, largely due to adding to the dietary, under the false impression that the breast milk or artificially prepared milks are no longer nourishing enough, pure milk, crackers, porridge, potatoes and bread. This will if persisted in produce chronic intestinal indigestion. During the second year the child does not need the large proportion of carbohydrates it receives in earlier life, that is, six of carbohydrates to one of proteids, as it is not able to digest and assimilate them if given in large amounts, as farinaceous foods. The child in its second year requires more nitrogen in proportion to other food elements than in its first year. Potatoes should not be given till the end of the second year, and then baked only. Potatoes and oatmeal are the most potent factors of indigestion at this age. All farinaceous foods should be secondary in the diet of a child until it has shown a capacity to digest them, usually at the end of the second year. During the developmental period great care should be exercised, as the child will preferably indulge more and more in the vegetable food to the exclusion of the animal class which goes for proper tissue-building, thus laying the foundation of various diseased processes, as tuberculosis, etc.

When adult life is reached we should not relax our vigilance and allow intemperance in dietary to reign, as too liberal indulgence in vegetables, fruits and alcoholic beverages, thereby giving rise to retrograde products of metabolism and toxins, the result of putrefaction and fermentation in the intestines, and thus engraft disease upon the system. Therefore the diet should be composed principally of milk, eggs, meats of all kinds, including fish, poultry and game, excluding veal and much pork of any kind. With this include liberal amounts of well-cooked bread, plenty of good butter, and a limited amount of vegetables, chiefly rice, peas, string beans, spinach, lettuce and macaroni, excluding much potatoes—never sweet—and eat sparingly of other forms of vegetables. Avoid all fried forms of food, bonbons, confections, pastries, cakes and rich desserts. Fruits should be used as already outlined. As to drinks, the first requisite is pure water. Man can live many days on pure water alone, as seventy per cent of the body is made up of water. The water should be taken preferably at about the temperature of the body, and not according to the peculiarly American habit, as ice-water and in large quantities. The taking of ice-water retards digestion, both by lowering the temperature of the stomach contents and by a dilution of the gastric juice. It is also capable of damaging seriously the delicate mucous membrane and finally causing catarrhal inflammation of the stomach and intestines in people otherwise predisposed to that affection. Water is better before, after or between meals, and not swallowed with each mouthful of food. A quart of fluid is sufficient for the needs of the day. Milk, being largely water, can be considered an efficient substitute for water, having at the same time nutritive value. If it be not well borne as milk some modification thereof, as buttermilk, skim milk, junket, koumiss, kefyr, may be tolerated. It is preferably taken alone with no other food, and warm, say one hour before meals. For reasons already given, if we are to maintain the highest perfection of nutrition and digestion we should avoid all alcoholic beverages, tea, coffee and soda fountain drinks. The individual by following religiously, rigidly and rigorously this outline of dietary will easily cope with the harrassing struggles of life, maintain health, and ward off disease. By neglect of these rules the individual will sooner or later cry out, "My stomach must be out of order." "Everything I eat sours on my stomach." "I am sick at

my stomach all the time." "I am all used up." "I must be bilious." "My liver must be out of order." "I must have malaria." On further questioning other symptoms are given, as eructation of gas, with or without a bitter, sour taste, accompanied by epigastric pain, relieved by belching; palpitation and pain over the heart region, headache or a feeling of uneasiness about the head, a feeling of languor; the tongue is coated, nausea may be frequent, bowels may be loose, and diarrhea complained of. Sleep does not refresh and the patient feels worse after sleeping. The individual becomes irritable and trivial affairs cause much worry. Inability to concentrate the mind and a desire to be left alone is common. The appetite may be impaired or aggravated.

In looking for the cause in any case we usually find the trouble to be due to one or more of the following causes: Rapid eating, improper food, eating when fatigued, use of alcoholic beverages, tea, coffee or soda-water drinks, too severe exercise after eating. The treatment of such condition is largely dietetic. Medicine is of secondary importance, and an aid for only a short time, overcoming the faulty digestion then existing. We must correct the underlying cause. Defective teeth should be repaired; indulgence in tea, coffee and alcoholics forbidden; too rapid eating corrected; eating too frequently at irregular times abandoned; eating when fatigued or exercising too soon after a meal forbidden. By exercise I do not mean the walk to and from business, but long walks, riding the wheel, or severe mental exertion.

Avoid foods as follows: Those containing much cellulose, as the coarser vegetables, skins of fruits, etc.; also those containing an excess of fat or prepared by the aid of fat, as fried foods, gravies, made dishes, sauces and generally speaking, those foods designed to please the palate without having any decided nutritive value. Sweets are to be avoided; oatmeal and other farinaceous food as commonly eaten, with sugar and cream, are especially pernicious and liable to undergo fermentation. Avoid eating at any time simply for the palatability of it; that is, at times when the stomach and intestines have not gotten rid of the previous indulgence. Briefly, impairment of nutrition and digestion is avoided by correction of bad habits of eating, use of proper foods, eating at proper times, with regulation of time and quality of drinks. Medicinal treatment is useless without proper dietetic management.—*Cosmos.*

TRUE STATUS OF THE PULPLESS TOOTH. By D. D. Smith, D.D.S., Philadelphia. Read before the National Dental Association at Niagara Falls, August 4, 1899. The pulpless tooth as an organ is unique and sustains unique relations among its confederates. It may be defined as a living organ with the greater part of its substance dead matter. Imperfectly understood, it has been perhaps more frequently the subject of experimental conjuration than of rational and scientific treatment. It seems to live in an atmosphere of suspicion and prejudice, for reasons not well defined nor consistently explained. In the minds of the laity it is universally associated with a "blackened" crown and rapid decay. In the profession it is almost as commonly esteemed an erratic organ, with sporadic disturbing tendencies impossible to control. By some it is thought to be of necessity an indicator of weather changes and an inevitable sleep-disturber. Without accepting any of these as necessary conditions we know that, as frequently treated, it is the cause of many aggravated and serious disturbances, as pericementitis, facial neuralgias, dental abscesses, and various pathological conditions of mouth, ear and brain.

The largest and most practical conception of a tooth is not that which comes from studying it in its anatomical make-up of pulp, dentin, enamel and cementum, with all the microscopical minutiæ relating thereto as found in the text-books; it comes rather with the view presented when studying the sources of its derivation, development, sustentation, utility and kindred phenomena. For practical comprehension of the pulpless tooth no better division can be made of it than the natural one of crown and root, for in this we have distinctly marked the two sources of sensation and nutrition distributed to it. Consideration of a tooth, whether physiologically or pathologically, should never lose sight of the fact that its utility is wholly dependent upon its secure attachment in the alveolus, and that this attachment is not alone mechanical, but that it is a vital living union practically if not wholly *independent of the pulp*. This attachment or living union, so very important for both comfort and utility in the tooth, is passed over and dismissed in the text-books with the remark that it is an articulation belonging to the order gomphosis.

The permanent saving of a pulpless tooth rests upon the fact that there is a source of nutrition to the cementum maintained inde-

pendently of pulp action, and that this nutrition of the root is practically unaffected by the destruction of the pulp. With the death of the pulp there is death of the whole of the *crown* of the tooth; the enamel and dentin are left absolutely without sensation or nutritive function. Whatever change comes to the crown of the pulpless tooth is of a distinctively disintegrating, retrograde character, tending directly to undermine its integrity. The disintegration will be rapid or gradual in proportion to the character of the individual tooth. The crown of a first permanent molar which erupts at six years of age, if devitalized at eight to twelve, will lose its cohesive strength, become fragile and seem to melt away under the adverse conditions to which it is ordinarily subjected in the mouth in very limited time, while a thoroughly calcified tooth devitalized as to its crown at or near maturity will generally complete its normal period of usefulness without visible evidence of the important loss the tooth has sustained. These phenomena are so well recognized that a statement of them might seem trite but for the bearing they have upon other and less familiar facts and observations.

While with the death of the pulp there is complete cessation of vital function in the crown, the vitality of the *root*, except in its dentin, is not interrupted or lessened. The cementum, with its membrane, is the most important tissue for the conservation of the tooth, hence the peculiar emphasis attaching to the fact that the cementum receives its nutrition and life from a source independent of and practically unaffected by devitalization of the pulp. Articulation with the alveolus also, that most important of the tooth's relations, remains unaltered, and there are substantial reasons for assuming that the functions of absorption and nutrition are not interfered with. Pulp endowment, in so far as it affects healthful union between root and alveolus, might be dispensed with without detriment after the tooth is fully erupted.

It is in place at this point to allude to that practice (possibly "fad" would better express its meaning) which holds so lightly the virgin alveolo-dental articulation that it breaks it up at pleasure; in other words, it extracts, mutilates and replants apparently without consideration or reason, and with no regard to the fact that this all-important relation once disturbed is never certainly restored. Such practice may attract attention and possibly gain fleeting notoriety,

but it is wholly at variance with the laws governing nutrition as exhibited in other parts of the osseous system. Extraction, we believe, destroys the life of the cementum and the pericementum. Excision of the root, and more especially denuding it of cementum, deprives the root of the only tissue through which restoration to a vital, nutritive union with the alveolus is possible.

A replanted tooth may for a time present the appearance of having resumed its normal relations, but it is a matter wholly undemonstrated that the pericemental membrane, when once its connection with the alveolus has been broken by extraction, ever resumes its true function—that of nutrition of the cementum. Replantation under the most favorable conditions, as quick replacement of single-rooted occluding teeth with no disturbance to root or membrane, is but an experiment in any case, and is frequently if not usually followed by beginning absorption of the root within a brief period. The period of usefulness for such a tooth is bounded by months rather than years, so that if the end sought is permanent restoration to usefulness the object is not often attained. "Extraction," "excision," "treatment out of the mouth," "replacement," may sound to the ear as of a dento-surgical operation of magnitude and importance, but the procedure is believed to be unjustifiable from any surgical standpoint or from any good results yet born of it, it being physiologically incompatible with the office of the tissues involved. And if this be said of *replanting* under favoring conditions, what shall be said of the modern operation of *transplanting*, that process which selects months-old, dried specimens to plant in artificially prepared cavities in the jaw? Can any preparation of such a root as shaping, polishing, filling or disinfecting, restore to its dead cementum or pericementum the life which shall reunite it in a living union with osseous tissue in which it may be implanted? As well might we look expecting to see the fulfillment of Ezekiel's vision in the valley of dry bones, or that wonderful prophecy of a young professor in one of our dental colleges, whose raptured vision beheld teeth shaped from animal ivory, and even porcelain, planted in openings made vacant through extraction, as that the dried cementum on the root of an extracted tooth shall ever be revivified and renourished through the instrumentality of pericemental action. One of two results must follow the operation of replanting or transplanting a tooth: either there will be renewal of the nutritive function in

cementum and pericementum, or there will be elimination of the tissues of the root through absorption or suppurative displacement. Living tissue abhors dead matter, and cannot be induced into permanent association, much less vital union with it. The reunion between the implanted portion of the tooth and the jaw which for a time seems to take place is more apparent than real; the discolored gum-tissue and the retarded circulation reveal that the union is more mechanical than vital.

But to return to a more careful study of the root portion of an undisturbed pulpless tooth. *It* is a vital, living organ, retaining and exercising function as when the pulp distributed sensation and nutrition to the dentin and enamel. Engorgement of pulp-tissue resulting from a recent devitalizating application may and frequently does produce hyperemia of the pericementum, but the resulting irritation quickly subsides on removal of the devitalized pulp. There are no necessary untoward cemental or pericemental symptoms—neither change in the office work of these tissues following the removal of the pulp—hence this operation, accompanied with proper disinfection of the tubules and of the intertubular matter, necessarily implies uninterrupted normal function of the tissues which furnish vital attachment between root and alveolus.

Pulpless teeth when properly treated are wholly comfortable; not weather indicators, not erratically subject to periodontitis, alveolar abscess and other pathological conditions, but teeth with a favorable prognosis in all essential particulars.

Pulpless young teeth, that is, teeth which have lost their pulps before the vascularity of the cementum has been restricted by the contraction of its lacunæ and canaliculi through deposits in its substance, are far more subject to cemental accretions, or so-called exostosis, than the same teeth with living pulps. This is by no means an unfavorable condition, as through it the territory of normal circulation is increased to the benefit of the tooth.

A noticeably frequent result of pulp-destruction is a closer, firmer union of root and alveolus. This is probably due to two causes: first, an increased tendency to a deposit of cemental tissue on the surface of the root; second, the entire obliteration of calcific deposit through pulp influence. A pulpless tooth which has never been the subject of pyorrhea alveolaris, the author from careful observation believes to be practically if not entirely exempt from that

trouble; and removal of the pulp in the beginning of the disease in individual instances is attended with most satisfactory results.

The value of a pulpless tooth should not be estimated from the condition of the natural crown, as *it*, with present methods for permanent crown restoration, is the least important part of the tooth. The *root*—the living part—and its surroundings, that upon which the permanent comfort and retention of the tooth depend, should always form the basis of judgment and a diagnosis. If the root portion of the tooth is firmly in vital union with the alveolus and without pyorrheatic tendencies, the condition of the crown, whether much decayed or broken, or whether wholly gone, is not a matter affecting the possibilities of restoration in the smallest degree. A crown having the appearance of the natural tooth, and practically indestructible, can be supplied on any good root, and on many very badly broken ones, in any part of the mouth. That root which has an uninjured pericemental connection never questions as to whether the crown it is supporting is natural or artificial, but performs all the functions of a tooth with uncomplaining fidelity.

It is generally easier and more satisfactory, because of facility of access, to deal with a root or roots devoid of crown than with a tooth having a crown susceptible of contour restoration by means of a so-called filling. We conclude then, that the pulpless tooth, with or without a crown, is a living organ of the economy and to be treated as such. It may be removed or extracted when obviously demanded for cause, but *never for treatment.* Special care is demanded in its treatment not to pierce or otherwise injure the cementum or its membrane; to thoroughly remove all pulp decomposition, and disinfect the tubular and intertubular matter. To accomplish this there may and should be rather free removal of the dentin from the thicker portions of the root, care being exercised not to trench upon the cementum and to leave the apical third practically undisturbed. The one root-dressing and disinfectant than which nothing else is demanded, as nothing acts so well, is pure wood creasote. If it is proper to speak of specifics among remedies, creasote is a specific as a root-dressing, acting to promote harmonious relations between the devitalized dentin and the living cementum. It may be tightly impacted on raw cotton and sealed in a root from which an aseptic pulp has been removed, but never so applied in a septic root.

Removal of so much of the dentin as may be determined upon, enough at least to gain free access to the root-canal and thorough cleansing of the root from all septic matter, should be followed first by instrumental applications of the creasote in the canal, and this in a few hours by a few fibers of saturated cotton placed loosely in the canal; and this again by cotton more closely packed, until the creasote and cotton can be tightly sealed in the root. When the cotton withdrawn from the sealed root has the odor of the creasote only it may be permanently sealed with filling material, or with a post in cement, with perfect assurance of future comfort. Successful treatment of a tooth having a septic pulp, accompanied with tendency to pericemental trouble, requires judgment, tact and experience, which no details in a written article can impart. This one point may be emphasized to great advantage, viz., no root should be sealed with a permanent filling without first testing it with a cotton and creasote dressing and not until the creasote permanently overcomes all other odors is the root ready for filling.

It has yet to be fully comprehended that "*methods*" of filling, as well as filling-materials themselves, are wholly subordinate to preparatory treatment of the root; and that that treatment is best which best promotes healthful nutrition of the cementum, remembering that whatever assistance may have been imparted through pulp influence from the living dentin is now withdrawn. Hence the effort should be to hold the devitalized dentin forming the body of the root in harmonious relation to the life of the cementum. And this object is much more certainly accomplished with creasote than with any other remedy.

It is not the purpose of this paper to discuss root-filling materials nor their methods of use; neither crowns nor methods of crowning; but it is wholly in place after an experience of some fifteen years in the use of amalgam for setting the Bonwill crown to raise a voice of warning against the use of amalgam in roots, either as a filling-material or for the setting of posts. This latter operation can be done with greater facility and with equal security in the use of the non-irritating oxyphosphates, themselves reliable root-fillings and of adequate strength for securing posts. The oxychlorids are perfect root-stoppings and to be preferred above all others in pulpless teeth retaining the natural crown.

Reference has been made to the fact that a crown having the

appearance of the *natural organ* can be securely applied to *any* root having the alveolo-dental articulation in a normal physiological condition. Emphasis should be given this statement, and an energetic and most emphatic protest raised against the increasing use, both in crown and bridge-work, of the disfiguring gold crown. Perhaps nothing cheapens dentistry more or more justly subjects it to jest and ridicule than the present unseemly and wholly unnecessary display of gold in and on the teeth. Gold crowns are admissible only on the roots of molars, where they are not exposed in ordinary movements of the mouth. Incisors, cuspids, bicuspids upper and lower, and upper and first molars can be readily crowned with a band and post, so constructed that the porcelain tooth only shall be exposed, while all strain of mastication and occlusion is thrown upon the gold, which is entirely concealed. For first and second individual lower molar roots there is nothing comparable to an all-porcelain crown, of a construction which permits of fitting and setting the posts independent of the porcelain, on the principle of Bonwill crown. Such crowns carefully adjusted and set in oxyphosphate, or better, a mixture of oxyphosphate and a good amalgam, form a tooth which for durability and appearance leaves nothing to be desired.

[This forms a practically new cement. My attention was first called to its valuable properties by Dr. L. C. Taylor; afterward I had the pleasure of seeing it elaborately demonstrated by Dr. Clinton W. Strang. It is produced by first preparing a mix of amalgam as for filling, and following this immediately by mixing a good cement as for same. While the amalgam and cement are still in working condition, they are incorporated by mixing together in about equal parts. The resultant compound takes much more the nature of the cement than the amalgam. The color is sparingly improved, but the adhesive properties are greatly improved in the new cement. It attaches itself very tenaciously to dry dentin, and stands the wear of mastication much better than any plain cement. This mixture of cement and amalgam is valuable in many cases in practice, and should be more generally known.]

We are thus led to the inevitable conclusion that the pulpless tooth is a living organ, maintaining when properly treated the same vital relations with the alveolus as when it carried a living pulp; that it is susceptible of perfect esthetic restoration, and that for retention and utility its prognosis is most favorable.—*Cosmos.*

MULTIPLE NECROSIS OF THE MANDIBLE. By W. H. Breward Neale, L.D.S. Read before Odontological Society of Great Britain. The patient, a medical man, consulted a dental practitioner on account of great pain from a mandibular right cuspid in which the pulp was exposed. At the first visit the pulp was dressed with a devitalizing agent; at the second a portion was extirpated; at the third the root and crown were filled, but a flexible drill was broken in the canal. The position of affairs was made clear to the patient and he went away. On the fourth day he experienced great pain and asked that the tooth be removed, but as it was thought possible to save it an opening was made through the alveolus with a view of relieving the pain. The patient attended the next day again, hoping to have the troublesome tooth removed, but the practitioner still thought removal of the root unnecessary and excised the crown. On the sixth day, however, the root was extracted, but no relief following the case passed into the hands of one of his surgical colleagues.

The patient was admitted into the Queen's Hospital on Feb. 9, 1899, with intense pain and swelling in and around the right side of the mandible. The condition of things became worse; intense boring pain was experienced in the jaw, and there was considerable swelling on both aspects of the alveolar border and below the body of the jaw. An incision was made through the inflamed gum under gas, but no relief followed.

On the 10th he was ordered hot poppy-head fomentations, a mouth wash of the same, a calomel purge and quinin—morphia to be given hypodermically when necessary. On the 11th the pain was more intense and extended to the symphysis, the gum was much swollen, and the right submaxillary and submental regions were swollen and brawny. No fluctuation could anywhere be detected. Temperature 101 degrees F. As the point of most pain was located round the right first bicuspid, gas was given, the tooth extracted, and a free incision made down to the body of the bone through the junction of the gingival and buccal mucous membrane. No pus was evacuated, but the bone was bare for a considerable area. A light packing of iodoform gauze was inserted and warm antiseptic mouth washes were used frequently.

On the 12th the pain was still as severe, and the inflammation was extending to the left side. Gas was again given and an incision

made down to the bone below the central incisors. On the 13th the temperature went up to 103 deg.—the left side of maxilla was involved as far as the angle, and the submental and submaxillary regions were more swollen, the outline of the neck being quite obliterated. The floor of the mouth was much swollen and inflamed, causing considerable difficulty in swallowing, and some embarrassment of breathing. The constant dribbling from the mouth of the increased salivary section was very troublesome and the general condition was grave.

The patient was seen in consultation. No fluctuation could be detected, but it was thought advisable to make two further incisions under gas, one below the left bicuspids to the body of the bone, and one externally to the middle line to the inner aspect of the symphysis. No pus was found, but the bone was bare in each region. Some sero-sanguineous fluid oozed out.

During the next forty-eight hours the temperature fell to 100.5 deg., but the local condition continued unsatisfactory. Indistinct fluctuation was now felt in both submaxillary regions, so gas was given and the external incision enlarged. Sinus forceps were passed laterally along the denuded bone and a slight quantity of pus was evacuated. The pain was now less and there was no further extension of the inflammation. On the 16th the temperature rose to 102.4 deg. and the general condition was not quite so satisfactory. Pus then began to escape from the incisions in the mouth and improvement followed. The temperature after the 19th ranged from 99 deg. to 100 deg. On the 24th distinct fluctuation was noticed in left submaxillary region. An incision was made and nearly an ounce of pus evacuated. Steady improvement took place, the swelling everywhere considerably decreased and the temperature fell to normal. During this time the teeth in the lower jaw gradually became loose, especially the incisors and bicuspids. They both moved individually and *en masse*, showing that the alveolar border was much damaged. It was at this time hoped that the necrosis would be limited to the alveolar border and the bicuspid regions of the body of the jaw, as the swelling was almost limited to these regions.

On the 27th he was able to return home, and rapidly became convalescent, the local condition being marked by alternating periods of quiescence and activity. Minced and soft food only could be taken, both because of the condition of the teeth and the difficulty of

opening the jaw. About the middle of March the dead bone began to loosen, and one or two sequestra were removed from the openings in the jaw on the right side. The difficulty of mastication persisted and mobility of the jaw was much impaired. After consultation it was decided to extract the right lower first molar, as the recurrent swellings were chiefly located round this area. Some local improvement followed, and at short intervals sequestra presented at the openings in the gums, and were removed under cocain. On April 2 the right lower third molar was extracted, as it had become painful and partially dislocated and the swelling had extended to the ramus of the jaw. Local improvement again followed and further sequestra were removed, but it became apparent that external incisions would be required, so on April 22 chloroform was given. Submental incisions were made laterally from the sinus leading to the symphysis, and all loose sequestra (ten) removed from the interior of the jaw. The finger could be easily passed on each side through the bone into mouth. It was found impossible to preserve any teeth except the left lower cuspid and first bicuspid, and the left third and second molar. Good recovery was made, but for some days much annoyance was caused by the free flow of saliva through the bony cavities and external wound. For two months things were fairly quiescent, one or two small sequestra being removed at intervals.

On June 27 the gum on the right side was incised under gas, and a large sequestrum removed, and at the same time the left second molar was extracted. On July 5 a large sequestrum was removed from the right side after incision of the gum under gas prolonged by using the nose piece. Further sequestra were removed at longer intervals, one notably large from the left side in September. The left third molar was extracted Nov. 9, as it was causing pain and swelling, and there was now no further need to keep pressure from the left cuspid and bicuspid which had become fixed, although there was still a small area of dead bone close to the root of the former. This separated and was removed on January 5, 1900, and on the same date a small sequestrum pointed and came away through a small external localized sinus over angle of maxilla on right side. At this date the maxilla seemed quite sound with the exception of these two unhealed sinuses, and some slight tenderness and swelling over the region of left third molar. The denture could, however, be worn with comfort. Mastication was well per-

formed and there was free mobility of the jaw. The area supplied by the mental branches of the inferior dental nerve was partly hyperesthetic and partly anesthetic.

The case is interesting surgically: (1) from its causation; (2) from its gravity during the first few weeks. The risk from sepsis was considerable, and at one time the fixation of the floor of the mouth gave rise to considerable anxiety. Had the inflammation extended to the glottis asphyxia would have ensued, for owing to the swelling of the neck a tracheotomy would have been almost impossible; (3) from the failure of incisions or extraction of teeth to give relief to the pain, which was most intense, owing to the central character of the inflammation; (4) from the long period during which sequestra separated, twelve months; (5) from the number of the sequestra, forty-nine were in all removed. The average size of the larger ones was 1 inch long, ¼ inch wide, $\frac{1}{16}$ inch thick, and they were dense, fenestrated and ragged in character; (6) from the extremely satisfactory result—a perfectly useful jaw without any visible deformity, well able to support the pressure of a denture—a result largely contributed to by the pluck of the patient, and his readiness to submit to all operative measures deemed advisable.

Mr. Breward Neale said he first saw the case on March 4 with Mr. Marsh, who explained to him the uncertainty of the results of the disease, and told him that the particular molar required to be extracted was giving great trouble, but that the mandible was in such an uncertain condition that it was possible if any great force were used in removing the tooth the mandible might be fractured. The conditions were very much complicated by the fact that the mouth could not be opened further than just to enable a very small mirror to be used, and when ultimately it was decided to extract the tooth he removed it with a pair of very small upper molar forceps. The patient was seen from time to time, but the mouth remained in the same difficulty as to opening and the difficulty of making examination; but by May 5 he was sufficiently well to come into town, and Mr. Neale managed to get some impressions, as he was afraid if the whole of the lower teeth were lost—which then appeared probable—it would be very difficult to estimate what was the normal relative position of the mandible to the maxilla. He therefore managed to get some sort of a model in section and took the bite. On June 1 a distinct improvement was shown. The right

second molar was troublesome, but it was not removed as the patient had the lower left bicuspid and cuspid standing, and there was no doubt some necrosed bone around them. It was by keeping the third and second molars on that side as long as possible that enabled the premolar and cuspid to settle down; the molars acted as cushions to prevent the weight of the closure of the jaw falling on the cuspid and bicuspid. It was very difficult to decide whether these teeth ought to be extracted, but they had been kept and were now quite rigid and useful. In September a denture was made, which gave no trouble at all, and retained its position in the mouth in a way he had seldom seen a lower denture do without bands. He attributed that to the patience and adaptability of the patient. In October and November some teeth were filled, among them the upper right cuspid, in which the pulp was decomposed and in a foul state.—*Brit. Jour. D. S., April, 1900.*

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EXPERIMENTS IN VULCANISING DENTAL RUBBERS. By David Headridge L.D.S., Eng. Read before the Manchester Odontological Society. To begin with, one so often reads of the desirability of vulcanising dental rubbers at certain temperatures to obtain the "best" results; that certain qualities are superior to others; that it is particularly advantageous to vulcanise between metals so as to increase their strength, and the like; without the record of any scientific data upon which such assertions are based, that I thought by a series of experiments these statements could be verified or refuted, and so serve as a guidance in practice. However, such experiments have still to be carried out, for despite the assertions of certain firms, I yet want a standard rubber, one whose working range is a calculable quantity, and that limited. In the first place we began with a series of experiments to establish the best temperature at which to vulcanise a given rubber, both as to the time occupied in getting up to a given heat, and the time taken in maintaining that heat. The rubbers were tested by clamping in a vice and suspending a weight. We soon found that great variability existed, not only as regards different temperatures, etc., but as regards the same rubber at the same temperature, although fairly satisfactory results seemed to be yielded by the temperature and times we had long adopted, and which served with certain variations as the basis of our future experiments. However, the variation exist-

ing with the rubber under test for equal conditions made me anxious to secure a better rubber if possible. With that object I secured the examples tested on Table I., as the one I had been working with was *A*. I thought it did not come out of the ordeal so badly, and began to think that the failure was due more to the method of testing than the rubber, for everything in these experiments depends upon an accuracy of execution in which every detail is carefully considered, noted and carried out, so that anybody who chooses may refute or confirm the experiments recorded. I hope in this we at least succeeded, so far as was within our power; and I may say in passing, that the sizes recorded when below an inch were carefully measured by a micrometer. So with an idea of testing sample *A* more carefully we made another apparatus, so as to test the crushing strain that could be applied, noting the deflection produced, and the elasticity of the vulcanite to regain its original shape, the weight being a long column of water which we could easily increase or decrease (*v.* Table II.). However, we found this deflection bore no relation as I had anticipated to the weight supported by a strip of vulcanite. Some snapped soon without much deflection, others bore a considerable weight before breaking, many specimens bending double and not breaking, so this apparatus was discarded, as we thought this record unsatisfactory; although by it I found the same variability existing as to the quality of the vulcanite to resist a breaking strain, which test seemed to me the most satisfactory one to submit rubbers to, as when not weighed by other considerations it is the one most important from a practical standpoint.

Further consideration induced me to design the next apparatus. In this pieces of rubber vulcanized, in strips cut from the ordinary sheets supplied, invested in plaster in a tin box, and afterwards filed up until they measured 4 in. long, ½ in. wide, $\frac{1}{40}$ in. thick. These were placed between two wood uprights, ¼ in. thick, 2½ in. apart, and on the outer side the rubber was pierced for brass pins ⅛ in. thick; from the middle, by means of a bar resting on the upper surface of the vulcanite, a scale pan was suspended in which weights could be added, noting the deflection till it broke, the weights being then added up (Table III., test 3). Here, again, the deflection did not bear relation to the weight supported, some breaking with slight deflection, others showing a considerable elasticity, the rubber usually but not always breaking in the center, usually also breaking

in two pieces, but sometimes into several. As a further supplemental test, each remnant was tested by the tension method (Table III., test 4). I then experimented with *D*, as it was an English rubber of a very well-known maker, but here again the results were variable to an extraordinary degree. I then took *B*, but here failure awaited me, for likewise I had not a rubber on whose quality I could rely; for this I seem doomed yet to wait, but if any of my hearers, or the firms to whom we seem beholden for our dental goods, can supply me with a rubber with a less variation than nearly 50 per cent I shall hope to carry out the original idea of my experiments, or let me be corrected in the method of procedure or in the results obtained. Other rubber goods have to pass ordeals to which even 5 per cent of a variation is a condemnation, and though the proportion of sulphur is increased from that required in ordinary rubber goods, in fact in this so-called "ebonite" quite a different compound is produced, yet one has some little suspicion, not unjustified by the remarks in certain scientific books dealing with the manufacture of rubber goods, that it is in some such stage as the "mixing" that the cause of our trouble lies. However, taking into account this present unreliability, it is essential that all dentures made mostly of vulcanite should be efficiently strengthened, not only as regards the general body of the denture, but also no reliance should be placed upon it for attaching odd teeth, if they are expected to perform the duties normally assigned to them. When we consider that in mastication forces varying from 30 to 200 lbs. are exercised by the muscles, it seems as though vulcanite should be used merely as a covering for a skeleton denture, and that much of the labor some of us younger men considered wasted by older practitioners was not altogether unjustified when they laboriously soldered all isolated teeth on to strengtheners, rightly so-called, even in many cases where several teeth had to be attached. Of course some teeth not brought powerfully into mastication may last for years with this fragile vulcanite support or the lucky attachment by a severe-strain-bearing section of rubber.

Another point I would like briefly to comment upon is the relation of various metals to rubber. Some of my results were arrived at purely empirically, but if one thinks of the body incorporated with the caoutchouc, sulphur, and its readiness to enter into incorporation with various metals, one might be saved disappointment.

Only a few metals have I noted, not having conducted any experiments with that object in view, simply recording results obtained during many years. Platina, gold and tin go well with rubber, as they are not readily acted upon by the sulphur. Silver is blackened and the sulphid formed must necessarily weaken any attachment. Dental alloy does not seem to be so much acted upon. Lead turns the vulcanite black through formation of sulphids (noticed in type metal molds for vela). Copper renders the vulcanite quite soft in its proximity, brass only slightly, again due to the incorporation with the sulphur. Iron is affected by and affects the vulcanite, wires in it being loose after vulcanization; therefore it is advisable to so twist your regulating piano wire as to secure a good hold in the rubber, or tin the part of the iron intended to be in contact with it. Aluminium seems to cause some chemical change; at least a strengthener I once used, said to be of that material, caused a bulging up of the vulcanite after it had been worn a short time. Nickel has something of the same effect, the vulcanite having a tendency to warp away from its contact if exposed on wear. Zinc causes a blistering of the rubber somewhat similar to nickel.

SIZE OF VULCANIZED RUBBER USED.

TABLE I—TEST NO. I.

Length, ½ in. between suspension of weight and jaws of vice.
Width, ½ in. Thickness, $\frac{1}{40}$ in.

Rubber used.	Time, Getting up, mins.	Vulcanising, hrs.	Vulcanising, mins.	Temperature, Fahr.	Breaking Weight. lb.	Breaking Weight. oz.
Base A.....	25	1	20	331°	23	1
" B.....	"	"		"	27	6
" C.....	"	"		"	19	4
" D.....	"	"		"	24	1
" E.....	"	"		"	21	1
" F.....	"	"		"	16	4
" G.....	"	"		"	20	6
Pink A.....	"	"		"	10	1
" B	"	"		"	7	1
" C.....	"	"		"	4	1
White.....	"	"		"	3	10
Black.....	"	"		"	10	7

The samples were selected from what are reputed to be the "best" rubbers on the market, with the exception of black, the quality of which is uncertain.

NOTE.—The temperature given is the reading of a *pressure gauge*,

95 lb. or 331° Fahr. The thermometers used at the same time gave, one 320° Fahr., another 316°. The same reading of the thermometers with another pressure gauge indicated 342°, so that the temperature did not exceed 320° thermometer reading. But all the rubbers were tested with the first pressure gauge, and the thermometers with the reading indicated.

TABLE II.—TEST NO. 2.

Length, 1 in. Width, ½ in. Thickness, $\frac{1}{40}$ in.

Rubber used.	Time. Getting up, mins.	Vulcanising, hrs.	mins.	Temperature, Fahr.	Breaking weight. lb.	oz.
Base A.....	25	1	0	331°	8	1
"	"	1	10	"	16	4
"	"	1	20	"	Bent double, did not break.	
"	"	1	30	"	17	1
"	"	1	0	"	18	6
"	"	1	10	"	Bent double, did not break.	
"	"	1	20	"	21	7
"	"	1	30	"	8	6

TABLE III.—TESTS NOS. 3 AND 4.

Test No. 3—Length, 4 ins. (2½ ins. between supports). Width, ½ in. Thickness, $\frac{1}{40}$ in.

Rubber used.	Time. Getting up, mins.	Vulcanising. hrs.	mins.	Temp. Fahr.	Breaking weight, lb.	Tension. lb.
Base A.....	25	1	0	331°	38	34
"	"	1	10	"	78	38
"	"	1	20	"	101	78
"	"	1	30	"	56	46
"	"	1	0	"	80	48
"	"	1	10	"	56	58
"	"	1	20	"	78	60
"	"	1	30	"	64	58
Base D.....	"	1	0	"	44	51
"	"	1	10	"	Not tested*	
"	"	1	20	"	32	64
"	"	1	30	"	Not tested*	
"	"	1	0	"	88	64
"	"	1	10	"	Not tested*	
"	"	1	20	"	78	34
"	"	1	30	"	Not tested*	
Base B.....	"	1	0	"	108	71
"	"	1	10	"	76	68
"	"	1	20	"	46	36
"	"	1	30	"	68	79

*These samples lost.

TABLE IV.—REPEAT TEST AS BY NO. 8.

Length, 4 ins. (2½ ins. between supports). Width, ½ in. Thickness, $\frac{1}{40}$ in.

Rubber used.	Time. Getting up, mins.	Vulcanising, hrs. mins.	Temp.* Fahr.	Breaking weight, lb.	
Base D.....	40	1 15	315°	7	one side against surface of tin box
"	"	"	"	9	"
"	"	"	"	18	"
"	"	"	"	44	altogether embedded in plaster
"	"	"	"	48	"
"	"	"	"	70	"
Base A.....	"	"	"	32	"
"	"	"	"	78	"
"	"	"	"	44½	"

*Thermometer reading. The one that read 320° in the other experiments.

Discussion. *Mr. J. H. Jones.* In preparing these various rubbers, did Mr. Headridge boil them? There was a great difference in the results as to whether rubber was used dry or moist. He saw that the temperature had been 331° Fahr. Did Mr. Headridge use more than one thermometer? Was it tested by any others to see if it was correct? The temperature seemed abnormal. Were the experiments confined to one or various kinds of rubber? There were no two rubbers alike. The pigments varied. He did not think the tests were of much value except they were made with different rubbers. One rubber would contain a good deal of pigment, and another would possess a large proportion of sulphur. These would not stand the same test. They were perhaps working in the dark in this matter. In the whalebone rubber the pigment would differ from the pigment in an orange rubber. It would bear a greater strain. He had made experiments and tested the thermometer by a gauge, and tested the temperature as the experiment went on. The pigment in some of the rubbers he used had lead in it and turned black. He did not think that metals had much to do with the rubber. He thought they might get a better result if they had a heat not of 331°, but 310°, with a quarter of an hour longer in baking. With regard to alumnium, he had made several tests and had not met with the bulging which had been spoken of, and had used a piece for three years and had never had a lighter or better piece.

The President said with reference to the alumnium, he had the same results as Mr. Headridge. The reason was that the alumnium

had an effect on the rubber. If worn in the mouth some change took place. A chlorid formed which might affect it. The effect seemed to go right through plate and caused bulging.—*British Dental Journal, Feb. 1900.*

* * *

REMOVAL OF THE GASSERIAN GANGLION FOR NEURALGIA OF FIFTH NERVE. By Dr. Carl Beck, Chicago. Read before Chicago Dental Society. Dentistry, a specialty par excellence, needs contact with general medicine and surgery, as diseases of the teeth are often only an expression of general diseases and distant pathological changes which, if not recognized, may lead to entirely false treatment. One of the most interesting pathological conditions in this respect is neuralgia of the fifth nerve. Nine times out of ten the dentist will be the first man consulted, as toothache is one of the most prominent symptoms, and though it is only an irradiated pain, it leads with admirable regularity to extraction of the teeth. Long after all the teeth are gone and pain still persists, the diagnosis is made that the nerve or nerves are the seat of pathological change, the teeth only the peripheral end into which it is projected.

This very interesting and comparatively common disease is amenable to different treatment. Many cases yield to medicinal treatment; many are cured by an etiologic treatment, like syphilis or rheumatism; but there are instances of this disease which resist any medicinal or hygienic treatment, and which are turned over to the surgeon to cure by operation if possible. I say if possible, for every surgeon of experience has occasionally a case which remains the same or even gets worse after operation. Not one but many operations are devised, and these unfortunate patients have often had tried on them all the single methods, have had three or four or even more operations before they are cured. As a last resort the operation of removal of the ganglion is done.

I shall not discuss the scores of different surgical methods of treatment of neuralgia of the fifth nerve, but shall describe only the removal of the Gasserian ganglion for cure of the disease, and that only by the temporo-cranial way. The methods have developed gradually from the most simple to the most intricate. First the nerves were cut (neurotomy), then portions excised (neurectomy), then pulled out of their bony canals and twisted out (neurexeresis),

and if this does not help the centrum is cut, the nerves are divided close to their central origin, and inasmuch as there are some cases of poor results after this operation, perhaps some future genius may remove the centrum and succeed, or not, in coping with the dreadful pains which resist all narcotics. On the whole, the removal of the Gasserian ganglion has been successful, and, though the published cases are still countable, the operation is by no means a rare one in the practice of a surgeon.

Let me recapitulate a few anatomical facts. The fifth nerve emerges from the brain with two roots, like any of the vertebræ nerves. The posterior root, consisting of about a hundred bundles of nerve fibers and stronger than the other, is first visible in the groove of the crus cerebelli ad pontem. Its fibers are sensitive. The anterior is thinner and covered by the posterior. It emerges from the gray nucleus of the fourth ventricle, and is first visible coming from the front portion of the pons varoli. Its fibers are motor. These two nerves join, and perforating the dura mater, their course leads toward a shallow depression in the petrosal portion of the temporal bone, called cavum Meckelii. There the posterior sensitive root develops into a ganglion, that is, its fibers spread and ganglionary cells and glia substance develop into a flat body of oblong shape, called the Gasserian ganglion. The motor fibers have no part in this formation. From the convex border of the ganglion three nerves emerge—the opthalmic, the supramaxillary and the inframaxillary. Very important structures are in the immediate neighborhood—the carotis interna, meningea media, the sinus cavernosus. The nerves leave the cranial cavity by different openings—the fissura supraorbitalis, the foramen rotundum and ovale, where the third branch is joined by the motor fibers of the anterior root.

As you see from the anatomical disposition, it must be the aim of the surgeon to remove the sensitive portion of the nerve and to leave the motor. This is very difficult, as they are close together and very deeply situated. (1) The merit of the first attempt belongs to Rose, who in 1891 tried to remove the ganglion or to destroy it by the so-called *transmaxillary* method through the removal of the superior maxillary bone, a method which is all the more dangerous as we leave the cranial cavity in contact with the mouth cavity, full of germs and danger of infection. Novaro has modified this method

in still more brutal way. The work is difficult and unsatisfactory. The danger of laceration of large vessels is great. (2) The pterygoid way, also first described by Rose and later by Andrews. Expose the foramen ovale by temporary resection of the zygomatic and coronoid process of the inferior maxillary bone. This is difficult and dangerous, though not opening into the mouth cavity. This method has had some success. (3) The best way remains, the temporal method. Some surgeons who have chosen this route have not removed the ganglion, but only cut the nerve. Horsley in 1890 pulled out the nerve from the brain substance. Hartley in 1892 cut the second and third branch without removing the ganglion at first, but in later operations removed the same. About the same time as Hartley, F. Krause of Germany made his experiments. According to von Beck's tabulation (1897), there were forty-one cases of intracranial resection of the ganglion, with six deaths and thirty-five *cures*, if we may say cures in the surgical sense of the word.

My own experience is derived from three cases, one of which died. The death was due to cancer propagated from the parotid gland into the brain. The operation was done as a palliative measure. The other two cases live and are perfectly well. One of these cases was all the more interesting, as the removal of the ganglion was his twelfth operation, his jaw and nerves outside having been removed before without success. I used the somewhat modified Krause method. I did not try to save the cranium, but after making a large flap incision in the temporal region removed skull to the extent of an inch and a quarter or more in radius. Then I separated bluntly the dura mater from the bone and held it back with a wide spatule, so that I could look into the temporal cavity. It is by no means an easy task to control the hemorrhage at this stage of operation, and is made possible only by advancing slowly and plugging the space between the dura and bone. A compression of the brain is indispensable and only by good pressure the field will finally be made visible. At the depth of about an inch we endeavor to cut nerves and extract them; then we cut out the ganglion, which is by no means a large structure. The brain expands quickly and fills out the cavity again, which is closed without drainage. I can recommend the method as a good one even for very advanced cases. The neuralgic pain usually stops at once and forever. The sequelæ, which have been described by some operators as paralysis of eye

muscles and muscles of the face, and tropho-neurotic changes, have not been observed in my patients.—*Review, April, 1900.*

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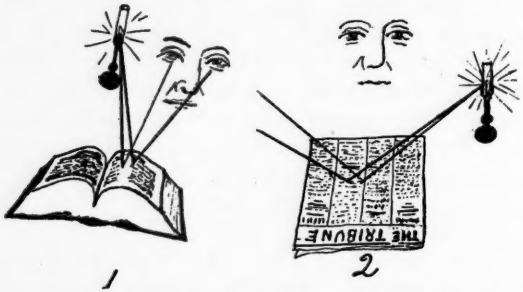
BOOKS ARE INJURIOUS TO THE EYES. By F. G. Murphy, M.D., Kansas City, Mo. In three ways the reading of books is injurious to the eyes: reading on a curved surface, one's inability to prevent light reflections from entering the eyes when reading from such a surface, and the long lines in most books that run the entire width of the pages.

The middle of the lines in most books is from an eighth of an inch to an inch nearer the eyes than the ends of the lines (Fig. 1). This necessitates a constant effort on the part of the ciliary muscles to keep the letters in focus on the retina while the muscles of con-



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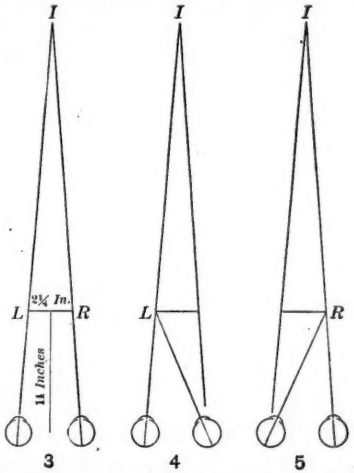
vergence and divergence are alternately contracting and relaxing. It is all the more tiresome when the reader has not perfect binocular vision. If he has poor vision in the right eye and reads altogether with the left one, he will not see plainly the words next to the binding when reading on the left page (Fig. 1). A flat page, such as that of a newspaper, is always more easily read (Fig. 2). Reading from a book is also made more difficult from the fact that both sides of the page are seldom equally lighted. Would it not be more restful to the eyes if the lines in books were to run parallel to the binding instead of nearly at right angles to it, so that all parts of the lines would be at an equal distance from the eyes and be equally lighted?

As books are now made it is nearly impossible to prevent light reflections from entering the eyes. One cannot look upon a curved surface of any length without the light which shines upon it being

reflected to some extent into the eyes. To read a book it is necessary to have the light come as much as possible from behind the reader, who holds the book slightly to one side. Then as the angle of reflection is equal to the angle of incidence, the reader will unavoidably have the light from nearly the center of the page reflected in his eyes (Fig. 1). If it is a newspaper, which is nearly a flat surface, that is being read, it will not be necessary to have the light come so much from behind, as the entire sheet can be illuminated when the light is at either side without any part of it being shaded (Fig 2). The source of illumination being at the side, the light



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reflections necessarily all pass to the opposite side of the reader's head, the angle of reflection being equal to the angle of incidence.

In going through a passenger train one may at any time observe that the passengers who read books have their backs turned more to the windows than do those who read newspapers. In order that the page of a book shall be perfectly lighted it is necessary to have the light come from nearly in front or from behind the reader. In my opinion the arrangements of the desks in the public schools, so that the light may come in at the left side, is not altogether satisfactory. If the student is facing the light and has a shade over his eyes, so that the light from the window will not directly enter the eyes, his book will be perfectly lighted, and no reflections from it

will enter the eyes, provided the light does not strike the book at a greater angle than seventy-five or eighty degrees; and yet to compel students to wear shades would hardly be practicable. There is but one way in which the curved lines may be straightened and the book well lighted, and that is by having the lines printed parallel with the binding. There would be no such thing as a curved line then and the book could be lighted perfectly from the side.

In my opinion the great width of reading columns has also much to do with tiring the ocular muscles. A column that is of less width than the pupillary distance is certainly more easily read than one that is wider. In Figs. 3, 4 and 5 the letter I represents infinity and L and R the distance (two inches and a quarter) between rays of light fourteen inches from the eyes. In reading a column two inches and a quarter in width there is not much strain on the external recti muscles. When the first word in each line is read at fourteen inches the left eye is not turned farther to the left (L in Fig. 4) than it would be to look at the distant object I, and the right eye would be turned no farther to the right when the last word of each line was read than it would be when at infinity (R in Fig. 5).

When the lines are longer than the pupillary distance the reader will follow the lines with his head to relieve the external recti muscles. If in reading a very long line the head be not turned, the first word of each line would be much nearer the left eye than the right, and the last word would be nearer the right eye than the left. The result is a smaller image in the eye farthest from the word. The eye soon tires under these conditions unless assisted by movements of the head, whereas, if the lines were shorter than the pupillary distance, the image in each eye would be practically of the same size, the muscles of accommodation would not be so rigorously taxed, and both the internal and external recti muscles would be greatly relieved.—*N. Y. Med. Jour., April, 1900.*

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HEMOPHILIA. By Charles A. Porter, M.D., Boston. Read before American Academy of Dental Science, Dec. 6, 1899. Fortunately this disease is a relatively rare affection, but as in tetanus, the appallingly fatal results which may follow trivial wounds make it wise for us all to understand something of the general symptomatology of the disease, and to know at least where further knowledge may be acquired on occasion. In the literature scattered cases are

found, dating back as far as the eleventh or twelfth century, where excessive or fatal hemorrhages followed slight wounds; but it was not until 1828, when Schönlein collected and described a number of cases, that the disease received its present name. The popular term "bleeder," first arose on this side of the water.

Legg defines hemophilia as "a disease congenital and hereditary, marked by a tendency to immoderate bleeding on slight causes, lasting generally through the life of the patient, and further accompanied by joint-affections, which are often as wearisome to the patient as the tendency to external hemorrhages is dangerous." From this definition it can be seen that hemophilia proper means much more than a single severe hemorrhage from slight cause, and has nothing to do with bleedings in anemia, Bright's disease, scurvy or jaundice, and is different from the hemorrhages in the new-born which do not tend to recur in later life.

It can be stated with truth that hemophilia is of all diseases the most hereditary; *e. g.*, in Switzerland the affection has been traced back in two families for three hundred years. In the Appleton-Swain families in Massachusetts cases have occurred for nearly two hundred years; and F. F. Brown is quoted by Osler as knowing of a case in the seventh generation. Several cases have been reported where all the male children have died; as bleeders are remarkably prolific, this usually means a large mortality. In one family all the male children died before reaching the age of ten.

Furthermore, the mode of transmission is extremely interesting. This disease affects males much more frequently than females, in the proportion of twelve to one; yet it is through the female line that the disease is almost always transmitted: in a given family the sons are bleeders, the daughters generally healthy; in the next generation the sons of the daughters are bleeders, while the children of the male bleeder are free. Not all the children as a rule are affected, but two or three brothers may suffer.

While by the older writers the Anglo-Germanic races and the Jews were thought to be peculiarly susceptible, it now seems doubtful whether race plays a very important part. Recently cases are reported among the natives of India and Japan.

The time of life at which the hemorrhages take place is variable; rarely in fetal life unusual blood extravasations are reported; in the first few days bleeding is more frequent, and ritual circumcision

among the Jews, celebrated on the eighth day, has often proved fatal in hemophilic children. It is interesting to note that the women in bleeder families, contrary to what might be expected, rarely suffer from profuse menstruation or unusual loss of blood at childbirth.

The hemorrhages in hemophilia may be spontaneous or traumatic; from the mucous membranes; into the skin or subcutaneous tissues; into the joint cavities; from the internal organs, as hematuria of renal origin; and finally, from any wound, ulcer or abrasion of the skin, however trivial—a pin prick, cutting the frenum of the tongue or penis, boring the ears. In childhood epistaxis is the most common manifestation; next come large ecchymoses and subcutaneous hematomata, with or without preceding injury. In later life hemorrhages from the internal organs, and especially recurrent hemorrhages in the joints or periarticular tissues. Probably these joint affections have erroneously led to the conclusion that this disease was related to rheumatism, or purpura rhumatica. More than once knees have been excised by surgeons, with fatal results, under the belief that the joint lesion was tubercular.

The periods especially liable to hemorrhage are the first and second dentitions and puberty. In the great majority of cases some manifestation of the inherited disease has occurred before the fifth year. Grandidier reports one hundred and fifty-two cases in boy bleeders, where eighty-one (more than fifty per cent) died before the eighth year. Patients rarely die from the first hemorrhage. At or about twenty-one is another danger period. When middle life is passed the disease tends to abate, and rarely the diathesis seems to be completely outgrown. This tendency to hemorrhage is undoubtedly variable in a bleeder; a given injury at one time will cause severe loss of blood; at another a similar wound behaves as it would in a normal individual. Damp seasons, exposure to cold, nervous excitement, are factors often spoken of, influences, however, which are always open to question.

Of especial interest to you, of course, are the frequent hemorrhages after operations in the mouth, especially after the extraction of teeth; and tooth-pulling in bleeder families has always been a procedure which the dentist has wished to relegate to his confreres. This trivial operation was four times fatal in one family, and by most authorities is considered unjustifiable except under very pecu-

liar circumstances. The opening of alveolar abscesses has proved more dangerous than allowing them to rupture spontaneously. While it is manifestly impossible for busy dentists or surgeons to inquire in out-patient clinics in regard to hemophilia, it is certainly obligatory that every physician who has treated a bleeder should carefully explain to the patient or his family the grave danger attendant upon any future operation. The points in the past history of a suspected case to be inquired about particularly are excessive hemorrhage from trivial wounds—lancing the gums, nose-bleed, large recurrent ecchymoses, so-called rheumatism in the joints without fever, hemorrhages from internal organs. A family history of bleeding will of course be of great value.

The amount and rapidity of hemorrhage in these cases varies considerably. A sharp loss of blood may immediately follow the extraction of a tooth, which rapidly exsanguinates the patient; or the blood may clot normally at first and the bleeding cease, to be followed in spite of the usual treatment by a continuous slight ooze, which at the end of days or even weeks reduces the patient to a condition of severe anemia or proves fatal. From this condition patients not infrequently slowly recover just as their life is despaired of; indeed, some physicians believe that true cases of hemophilia rarely stop bleeding until almost dead, and having in other cases tried in vain the usual remedies, they calmly await this period.

With regard to the pathology of the disease very little is known. In the majority of autopsies nothing unusual has been found either in the blood or tissues. Some investigators speak of abnormally small arteries, thinning of the middle coat, fatty degeneration of the intima and media. These later changes can be satisfactorily explained by the severe anemia before death. Some find in fresh cases an increased number of white cells; others nothing abnormal. The leucocytosis in late cases is that which accompanies all grave hemorrhages. Wright in certain cases has found that the blood coagulated very slowly, and attributes to this the continuous flow of blood, theoretically due to deficiency of the lime salts or nucleo-albumins. In support of this theory, some bleeder children have undoubtedly an abnormal craving for plaster.

That this delayed coagulability is not always present is shown by the fact that not infrequently a normal clot is formed; yet this is later washed away by the capillary ooze about it. It seems there-

fore that the real lesion must be situated in the capillaries or small arterioles, for here normal thrombosis does not occur, though the blood which flows from the wound may clot in the vessel. Patients with hemophilia are apt to be very thin-skinned, neurasthenic, liable to sudden flushings and vasomotor disturbances; it may be that some hereditary deficiency exists which interferes with the action of the vasoconstrictors.

With such an indefinite, irregular or unknown pathology, it is evident that our treatment must be chiefly empirical, yet always directed towards the formation of a clot *in the vessel walls*. The multiplicity of remedies suggested and tried speaks for their frequent uselessness. I shall therefore speak only of those which have been found successful, or at least rest on some rational basis. The female members of a bleeder family assume a serious risk for their offspring by marriage. Bleeder children should be protected in every way from injury.

Whether iron and other tonics, particularly sulphate of soda, as advocated by Legg, much affect the disease is open to question, but those physicians who have had charge of bleeder families feel sure that bland, unirritating diet, frequent catharsis, and a quiet, unemotional life, with change of climate, have favorably influenced the recurrence of hemorrhage. What interests us most, however, are the measures which may be taken to stop an actual hemorrhage. It is difficult to gather from the literature a definite opinion as to the real efficacy of the ordinary styptics given internally or applied locally, for after the administration of certain drugs it is often hard to determine whether the hemophilia ceased because of their administration or spontaneously. Ergot seems inefficient. It seems also doubtful if iron given internally can effect the coagulability of the blood. The two drugs which are spoken of most favorably are hydrastis canadensis, in doses of thirty minims every four hours, especially valuable in spontaneous hemorrhage from internal organs, and dilute sulphuric acid, twenty minims in an ounce of water four times a day. Sidal used the latter drug successfully in three cases, and stopped the hemorrhage in forty-eight hours, whereas the cases had previously bled to exsanguination. Perhaps the administration of calcium chlorid is the most scientific treatment. Wright and J. Clifford Perry both report cases where this drug was used with wonderful success: one a man of twenty, alveolar abscess, incision one-

eighth inch long, profuse hemorrhage in spite of pressure and styptics. He had several times bled until he fainted. Two brothers had died in infancy after trivial wounds. Calcium chlorid was given in grain doses every two hours, and after three doses the blood formed a firm clot. Wright reports one case in which the coagulation time exceeded fifty-four minutes. After two drams of calcium chlorid had been given at two-hourly intervals the coagulation time was reduced to twenty-five minutes, and after two more doses, to thirteen and one-half minutes. In a normal case the coagulation time was reduced, after a few doses, from fourteen minutes to six and three-fourths minutes. This drug is therefore worthy of trial, but in several cases no benefit has resulted.

Inhalations of carbon dioxid gas have been successful; also continuous inhalations of oxygen. Though the dangers and difficulties of transfusion of human blood are very great, I see no reason why it should not be done as a last resort. Fry reports three very interesting and successful cases where he infused normal horse serum. One patient received in all three hundred cubic centimetres; the improvement was remarkable, hemorrhage ceased and no harm resulted from these injections.

Whichever of these general measures the surgeon chooses to adopt, there is no doubt that absolute quiet should be insured to the patient. Davies, who has had marked success with two hemophilic families, placed the patient immediately on the occurrence of hemorrhage in a dark, quiet room, forbidding conversation, and withholding food entirely for two days. The hunger was relieved by small doses of opium, the thirst by a little ice water. He has had no success whatever with any general or local styptics.

The local measures may be divided into pressure and styptics. It seems of great importance that before pressure is applied the cavity should be thoroughly cleared of clots. Finger pressure is most intelligent, but has usually to be supplemented by whatever mechanical device the dental surgeon can devise. The best local styptic is gauze dipped in perchlorid of iron and firmly packed into the cavity. The jaws may be held together with elastic bands or an interdental plate or splint fitted. A wooden or cork peg has been driven through the gauze into the alveolus with success, but unfortunately oozing often occurs subsequently from the ulcerated gum. There are those who believe that the frequent traumata in

connection with packings induce fresh hemorrhage and do more harm than good. Antipyrin solution, twenty or thirty grains to the ounce, applied on absorbent cotton, is a powerful styptic. The actual cautery, which often temporarily arrests the bleeding, rarely is of permanent benefit. Hydrogen peroxid is a valuable styptic. Davies has had remarkable success with ethyl chlorid. Immediately after the extraction of the tooth he freezes the clot with a spray and maintains this condition for several minutes. In many cases he has not failed to arrest the hemorrhage. Normal human blood has been poured into the wounds of hemophilic patients and successes have been reported. General cardiac stimulants, unless absolutely demanded, are definitely contraindicated, especially alcohol. It is hard to see of what use salt infusion can be, for the previously diluted blood would be rendered thereby more incoagulable.

These are the measures which appear most useful: 1. Absolute quiet. 2. No food for two days. 3. Opium in small doses. 4. Internally: (a) Dilute sulphuric acid; (b) hydrastis canadensis; (c) calcium chlorid. 5. Serum infusion of direct blood transfusion only as a last resort. 6. Locally: (a) Cleaning out the clot; (b) freezing with ethyl chlorid; (c) antipyrin or peroxid; (d) normal blood for clotting. 7. And finally pressure evenly and firmly applied by whatever device will cause least disturbance or sloughing. If in spite of these measures, carefully carried out, the patient dies, the surgeon has done all in his power, and as I said, most cases come near to death before hemorrhage ceases.—*International, May, 1900.*

* * *

HYPERESTHESIA OF THE TONGUE FROM CONTACT WITH THE MUCOUS MEMBRANE OF THE JAW. By Dr. M. Gonsalves, Lisbon, Portugal. Two years ago a gentleman, professor, consulted me by the advice of his physician about a very severe pain near the upper first molar. The pain started from that tooth, radiating to the eye and head as an electric flash, whenever he touched that tooth with the tongue, and remained for a long time on the corresponding side of this organ, running from the point back to the root of the tongue and tonsils. The slightest motion of the tongue touching the tooth would provoke the pain, so that he could not speak.

The tooth was carious and the pulp dead, but the margin of the

cavity did not interfere with the tongue, nor was it irritated on the part facing the tooth; no periosteal inflammation; no soreness to percussion. I seized the point of the tongue with a napkin and drew it out as far as possible. This revealed a series of congested papillæ, very hard, and of a deep violet color on the left side of the glottis. Between them, running from back forward, there was a kind of a crevice or deep cut with ulcerated granulations on the margins. My first impression was that I was in presence of a cancer, though the odor exhaled was not characteristic. I told patient to bring his physician the next day, when I showed him what I had discovered. The doctor seemed surprised and his impression was the same as mine. Next day we had a consultation with three doctors. They agreed that it might be cancer, but it was not decided. Patient never had syphilis, to which ulceration might have been attributed.

In regard to the tooth, it was decided that it must be removed. That was done with no consequent relief to the patient. The second bicuspid and all molars had been extracted long before, so there was no tooth to interfere with the tongue on that side. Still, when the tongue touched the gum about the first molar region a violent pain of equal character was excited. The patient went home and continued treatment under the care of the three doctors. I knew later on that by the use of local and internal medicines the patient had recovered from the ulceration at the root of the tongue, but the hyperesthesia continued growing more and more intense until he was in a desperate condition. The doctors decided upon an operation and removed the alveolar ridge from the first bicuspid back to the tuberosity with no success. In short, since then they have tried a lot of drugs, electricity, ointments, baths, etc., with no better result.

The patient found that if the part be protected he was relieved, and so used over the gum a piece of thick paper which remained in place when moistened with saliva. While the paper was there he could speak without disturbance. This suggested the idea of protecting the parts with a plate. He went to a dentist who took an impression of the mouth and made a rubber plate covering the hard palate and alveolar ridge, without teeth and smoothly polished. Since then, about three months ago, all suffering has ceased. The patient has resumed his lectures and speaks about two hours three days in the week without interruption.—*Items, April, 1900.*

The Dental Digest.

PUBLISHED THE TWENTY-EIGHTH DAY OF EVERY MONTH
At 2231 Prairie Avenue, Chicago,
Where All Communications Should be Addressed.

Editorial.

NATIONAL DENTAL ASSOCIATION.

The arrangements for the meeting of this organization, which will be held at Old Point Comfort, Va., July 10–13, 1900, are about completed. A large number of good papers are promised, and we print in this issue a partial list of same. A rate of a fare and one-third on the certificate plan has been granted by most of the railroads. The Hotel Chamberlin will be headquarters, and the meetings will be held therein. No progressive practitioner can afford to ignore this meeting of his national association.

HARLAN HAS A BAD SPELL.

"Too Contemptible.—The Dental Digest for April has for its sole editorial one entitled 'Harlan, Holbrook and Hunt—The Disgraceful Triumverate,' (*sic*). It is too contemptible to be dignified with an answer. We are not adepts in Billingsgate."

The above is an "editorial" from the May issue of the *Dental Review*. Let it be clearly understood that we do not for one moment feel that any apology is due the editor of that journal for our criticism of him last month. On the other hand, he owes an explanation and abject apology to the entire dental profession, and to the Protective Association especially, for having defamed and insulted them and that organization by publishing Holbrook's scurrilous letter, the statements in which he knew to be false and intended only to injure the Association.

THAT ANONYMOUS CIRCULAR.

Our readers will remember that in the February number of this journal we printed in full an anonymous circular letter addressed "To the Teachers of the Dental Colleges of America." This circular was a dishonest but ingenious attempt to make it appear that the faculties of the various colleges of the country had a serious griev-

ance against this journal. It was intended to show that we were discrediting the profession abroad by slandering the educational institutions of the United States. We went into the matter thoroughly at the time and have since received many evidences from the deans of schools and other college men that this nameless screed does not represent anything except the personal malignity of its author. We advert to the matter at this time to direct the attention of the National Association of Dental Faculties to the fact that this anonymous circular was ostensibly issued with their approval, and that it is incumbent upon them not only to officially disclaim responsibility for it, but to make a vigorous effort to discover the author who brought the Association into disrepute and then cowardly concealed his identity. We have been informed that the writer of this circular belongs to the Faculties' Association, and there should not be much difficulty in compelling him to apologize for the stigma he has put upon that honorable body.

MAKE THEM SHOW THEIR COLORS.

In an editorial in the April issue of the DIGEST we reproduced a letter written by a tool of the International Tooth Crown Co., which had been printed entire by the editors of the *Indiana Dental Journal* and the *Dental Review* in their publications, and with some of the most slanderous portions omitted, by another journal, whose editor unwisely, but we doubt not, with the best intentions in the world, commented on same in an editorial. We discussed this letter and showed why such a communication was given space in those publications. Since then we have received several hundred letters from leading men of the profession, expressing their confidence in the Protective Association and its management, and urging that the work be not given up simply because of these attacks from outside the organization. At their annual meetings held during the month of May three state societies passed resolutions, and we do not doubt that they express the sentiments of leading dental societies of other states, and of the thinking men of the profession generally. Following are the resolutions:

RESOLUTIONS REGARDING DR. J. N. CROUSE AND THE DENTAL PROTECTIVE ASSOCIATION, ADOPTED BY THE ILLINOIS STATE DENTAL SOCIETY, AT SPRINGFIELD, MAY 9, 1900

In view of the recent activity on the part of the International Tooth

Crown Co., their agents and allies, both in and out of the profession, and the appearance at the same time in some of the dental journals of articles reflecting on the management and tending to destroy confidence in the Dental Protective Association, the Illinois State Dental Society, in thirty-sixth annual meeting assembled, deems it most opportune at this time to again put on record its confidence in and loyalty to the Association and its management, which has made of it such a wall of protection to the entire profession.

This Society desires also in the most emphatic manner to express its confidence in the personal integrity of Dr. J. N. Crouse, and hereby records its deep appreciation of the unselfish personal sacrifices that he has so freely made for so many years for the good of the cause.

This Society considers the cause of the Dental Protective Association the cause of the profession, and it condemns, as inimical to the interests of the entire profession, the circulation of slanders by traveling men and the publication of articles that are calculated to weaken the hands of those who are fighting our battles and to put weapons into the hands of our enemies. And this Society hereby calls upon all those who have the good of the profession at heart to give the Association a most cordial and unqualified support, and counsels them to show in no uncertain way their utter disapproval of all those who give aid and comfort to the common enemy.

A. H. PECK, Sec'y. (Signed) C. B. ROHLAND,
E. K. BLAIR,
J. G. REID,
Committee.

RESOLUTIONS PASSED BY NEW YORK STATE SOCIETY.

ALBANY, N. Y., May 9, 1900.

Resolved, That the Dental Society of the State of New York indorses and approves of the Dental Protective Association, and emphatically depreciates the formation of other societies or organizations for similar or divergent purposes.

Resolved, That we express anew our loyalty to Dr. Crouse, and extend to him our hearty appreciation of and confidence in his work as chairman of that Association. W. A. WHITE, Sec'y.

RESOLUTIONS PASSED BY CONNECTICUT STATE SOCIETY.

HARTFORD, Conn., May 17, 1900.

Resolved, That the Connecticut State Dental Association fully indorses the action of Dr. J. N. Crouse in his relation to the dental profession and to the Protective Association. We urge him to continue in the good work which we recognize has been accomplished at great sacrifice of time and money, and which we feel could have been done by no other member of our profession.

EDWARD EBERLE, Sec'y.

In the face of present conditions the supply houses and their employes, who have been circulating and printing matter of various kinds inimical to the best interests of the Protective Association and

the dental profession, must now do either one of two things—confess that in the action taken and spirit shown by them they are wholly in the wrong, and that they have been on the opposite side because they wished to see the Association wiped out, or take issue with the sentiments in favor of the Association expressed by prominent men and societies of the United States. The time has come when the supply houses and their agents must cease to be claw-footed, so that they may stick on either side of the fence, for the dental profession demands to know who are and who are not its true friends. The membership of the Protective Association will await with interest the action of these parties.

The profession is rapidly awakening to the fact that aside from the International Tooth Crown Co., which is avowedly warring against the Protective Association, all the opposition to our organization has come from the Dental Trust and its emissaries. The S. S. White Co. not long ago published a circular stating that no dentist need be afraid that the Crown Co. would sue him for using the Logan and other crowns manufactured by the White Co., and the whole tenor of their circular was to the effect that the profession need not fear the Crown Co. We strongly denounced the circular in the January DIGEST and exposed the motives of the S. S. White Co. in issuing same, openly accusing them of having in view only the belittlement of the Protective Association, yet they did not dare reply, thus avowedly confessing that our accusations were well founded. The traveling men employed by the Trust supply houses have in their peregrinations throughout the country told all manner of vicious falsehoods about the Protective Association and its management, and have done everything in their power to shake the confidence of the dentists in our organization and to prevent them from joining with us. The Trust editors have not hesitated to print matter derogatory to the Association and ourselves, although they knew that their information was not founded upon facts. Can a clearer case be made out against this gigantic octopus, which endeavors to hold the dental profession entirely in its grasp?

Last month we showed that the Crown Co. was trying by every means to wear out and break up the Protective Association, and its action during the past month has confirmed our statements. The Association has had to appear in various eastern cities on two separate occasions during May in behalf of members sued, and the

Crown Co. has adopted the most vindictive and unusual legal measures, on one occasion petitioning the court that the Association's attorney be fined $1,000 and be put in jail for six months, but happily they failed in this. We have no doubt whatever of the eventual outcome of this fight, for the Association has sufficient funds to carry on the defense for some time to come, as well as the necessary evidence, etc. The Crown Co. has, however, nearly four years more in which to collect royalty if its claims can be established, and it is necessary for the members of the Protective Association to stand firmly together and present a bold front to our enemies. An organization embracing the 6,000 leading dentists of this country can, if it has a singleness of purpose, cope successfully with all the abuses which have fastened themselves upon the dental profession. If you do not approve of such actions, the way to stop the attacks on the Association by Trust agents and journals is to refuse to admit either of them to your offices.

Notices.

MISSOURI STATE DENTAL ASSOCIATION.

The thirty-sixth annual meeting of this society will be held July 10–13, 1900, at Louisiana, Mo. A cordial invitation is extended to all reputable practitioners to attend. B. L. THORPE, Cor. Sec'y, St. Louis.

WISCONSIN STATE DENTAL SOCIETY.

The thirtieth annual meeting of this organization will be held at La Crosse July 17–19, 1900. A cordial invitation is extended to all members of the profession to be present. W. H. MUELLER, Sec'y, Madison.

CONNECTICUT STATE DENTAL ASSOCIATION.

At the annual meeting of this organization, held May 15–17, 1900, the following officers were elected for the ensuing year: Pres., A. C. Fones; V. P., Henry McManus; Sec'y, E. Eberle; Ass't Sec'y, C. C. Prentiss; Treas., E. B. Griffith; Ex. Com., F. T. Murlless, Jr., G. O. McLean, E. B. Abbey.

TRI-STATE DENTAL ASSOCIATION (ILL., KY., IND.)

At the second annual meeting of this organization, held at Evansville, Ind., May 8–11, 1900, the following officers were elected for the ensuing year: Pres., W. H. Pitcher, Ky.; Ind. V. P., F. J. Raymond; Ky. V. P., I. B. Howell; Ill. V. P., W. D. Davisson; Sec'y, W. H. Brosman, Ill.; Treas., M. M. Haas, Ind.; Ex. Com., C. E Whitesides. The next annual meeting will be held in Paducah, Ky., the second Tuesday in May, 1901.

TEXAS STATE DENTAL ASSOCIATION.

At the annual meeting of this organization, held May 15–17, 1900, the following officers were elected for the ensuing year: Pres., O. B. Love; First V. P., H. L. Pearson; Second V. P., J. M. Nash; Sec'y and Treas , J. G. Fife; Member Ex. Com., B. Jones.

IOWA STATE DENTAL SOCIETY.

At the annual meeting of this society at Dubuque, May 1–4, 1900, the following officers were elected for the ensuing year: Pres , T. A. Gormley; V. P., E. D. Brower; Sec'y, I. C. Brownlie; Treas., W. R. Clack. The next annual meeting will be held at Clear Lake.

MASSACHUSETTS BOARD OF DENTAL EXAMINERS.

There will be a meeting of the above organization in Boston June 20–21, 1900. Applications must be filed with the secretary before June 13, and application blanks and further information may be obtained from him.

G. E. MITCHELL, Sec'y, 25 Merrimac St., Haverhill.

ALABAMA STATE DENTAL ASSOCIATION.

At the annual meeting of this organization May 8–10, 1900, the following officers were elected for the ensuing year: Pres., J. P. Corley; First V. P., W. J. Reynolds; Second V. P., H. D. Barr; Sec'y, J. T. Cook, Jr.; Treas., W. B. Fulton; Ex. Com., J. P. Corley, J. T. Cook, Jr., R. P. Brown, A. Sledge, H. D. Boyd, Jr.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The seventeenth annual session will be held at Hotel Hygeia, Old Point Comfort, Va., beginning at 10 a. m. July 13, 1900, and continuing in session three days. Hotel rates will be $2.50 per day. Delegates will present certificates signed and sealed by the officers of their respective boards.

CHAS. A. MEEKER, Sec'y, Newark, N. J.

NEW YORK STATE DENTAL SOCIETY.

At the thirty-second annual meeting of this organization May 9, 1900, the following officers were elected for the ensuing year: Pres., J. J. Hart; V. P., R. H. Hofheinz; Sec'y, W. L. White; Treas., C. W. Stainton; Correspondent, H. D. Hatch. Wm. Jarvie and F. C. Walker were recommended for appointment on the Dental Examining Board.

TENNESSEE STATE DENTAL ASSOCIATION.

At the thirty-third annual meeting of this organization, held May 9–10, 1900, the following officers were unanimously elected for the ensuing year: Pres., W. M. Slack; First V. P., J. A. Dale; Second V. P., S. Dixon; Sec'y, A. S. Page; Treas., J. D. Towner; Cor. Sec'y, A. R. Melendy; Ex. Com., A. R. Melendy, one year; J. T. Meadors, two years; J. W. Peete, three years. The next meeting will be held at Mont Eagle.

NEBRASKA STATE DENTAL ASSOCIATION.

At the annual meeting of this organization, held May 15–17, 1900, the following officers were elected for the ensuing year: Pres., W. H. Sherraden; V. P., L. Mills; Rec. Sec'y, W. R. Clark; Cor. Sec'y, F. D. Sherwin; Treas., H. T. King. Omaha was selected as the next meeting place. The society refused to admit to membership a dentist who advertised.

KANSAS STATE DENTAL ASSOCIATION.

At the twenty-ninth annual meeting of this organization, May 1–4, 1900, the following officers were elected for the ensuing year: Pres., R. Matthews; First V. P., O. H. Simpson; Second V. P., E. Burgstresser; Sec'y, J. W. O'Brien; Treas., S. J. Renz; Member Board of Censors, G. Losh. The next annual meeting will be held the first week in July, 1901, at Ottawa.

INTERNATIONAL DENTAL CONGRESS RECEPTION COMMITTEE.

The following named gentlemen constitute a reception committee to look after American practitioners who attend the Dental Congress at Paris: Dr. DuBouchet, Pres., 8 Blvd. Des Capucines; Dr. Roussel, Sec'y, 74 Blvd. Haussman; Drs. Barnett, Bogue, Crane, Daboll, I. B. and W. Davenport, Fay, Gires, Hotz, Lie, Levett, Meng, G. and J. Ryan, J. H. Spaulding, Silva.

COLORADO STATE DENTAL ASSOCIATION.

The fourteenth annual meeting of this organization will be held in Boulder June 12–14, 1900. Everything points to an interesting and successful meeting, and it is earnestly desired that as many dentists as possible in the state be in attendance. Members of the profession in neighboring states are cordially invited to be present. FLORENCE S. GREEN, Cor. Sec'y, Denver.

AMERICAN DENTAL CLUB OF PARIS.

PARIS, April 26, 1900.

The American Dental Club of Paris desires to make known to all American dentists visiting Paris for the International Dental Congress that the members of the club place at their disposal some rooms which are in a central location, 40 Rue des Methurins, where mail can be sent and where light refreshments can be obtained.

The club extends a cordial invitation to all their American confreres to make use of these rooms as a general headquarters from August 5 to August 15..

C. V. DUBOUCHET, *President*, 8 Boulevard des Capucines.
GEO. A. ROUSSEL, *Secretary*, 74 Boulevard Haussmann, Paris.

NEW JERSEY STATE DENTAL SOCIETY.

The thirtieth annual meeting of this body will be held at the Auditorium, Asbury Park, N. J., July 18–20, 1900. Five excellent papers by well-known dentists have been secured, and as usual the features of the clinics on oral work, prosthetic dentistry, electric-furnace porcelain work, gold crowns,

bridges and allied subjects will be interesting and instructive. The exhibits will be the largest and most comprehensive ever attempted by the society. The clinics will be under the personal supervision of Frank Hindle of New Brunswick, and the exhibits under T. Edsall Riley of Newark, and aids. Headquarters will be at the Hotel Columbia, adjoining the auditorium, and the rates will be $2.50 and $3 per day. The profession are cordially invited to participate. C. A. MEEKER, Sec'y, Newark.

ILLINOIS STATE DENTAL SOCIETY.

At the thirty-sixth annual meeting of this society held in Springfield, May 8–11, 1900, the following officers were elected for the ensuing year: Pres., J. G. Reid, Chicago; V. P., M. L. Hanaford, Rockford; Sec'y, A. H, Peck, Chicago; Treas., C. N. Johnson, Chicago; Librarian, J. T. Cummins, Metropolis City; Ex. Com., C. R. Taylor, Streator; Com. on Science and Literature, A. W. Harlan, Chicago; Com. on Art and Invention, H. J. Goslee, Chicago; Supervisor of Clinics, J. E. Hinkins, Chicago; Ex. Council (terms to expire 1903), C. B. Sawyer, Jacksonville; M. L. Hanaford, Rockford; C. B. Rohland, Alton; Board of Examiners, C. M. Robbins, Carthage; C. C. Corbett, Edwardsville; S. F. Duncan, Joliet; Com. on Ethics, C. B. Sawyer, Jacksonville; J. D. Nicol, Peoria; Edmund Noyes, Chicago. The next session will be held at Rockford the second week in May, 1901.

LATEST DENTAL PATENTS.

647,557. Dental combination tool, H. L. Cruttenden, Northfield, Minn.
647,574. Dental dam-holder, S. M. Myers, Cleburne, Tex.
647,736. Dental handpiece slip-joint, J. D. Wilkens, assignor to Dental Protective Supply Co., Chicago.
647,956. Dental tool, N. R. Ford, New York City.
648,106. Dental engine, H. W. Heinz, Pittsburg.
648,196. Dental matrix-holder, W. P. Dickinson, Minneapolis, assignor to J. W. Ivory, Philadelphia.
648,242. Sterilizer for dental or surgical instruments, J. A. Cronkite, Los Angeles, Cal.
649,234. Dental tool-holder, A. Chiavara, Catania, Sicily.
649,336. Dental chair, J. W. McConnell, Cornelia, Ga.
649,642. Shaft coupling for dental handpieces, R. F. Ludwig, Chicago.
649,742. Dental forceps, B. B. Mories, Markeson, Wis
649,854. Dentist's mouth dilator, J. A. W. Lundborg, San Francisco.

PARTIAL PROGAM OF NATIONAL DENTAL ASSOCIATION.

Section V. Anatomy, Surgery and Pathology. The chairman of the section selects the subjects upon which papers are to be presented, and names the essayists. He has for this year prepared the following program:

Anatomy. Source of Nutrition of the Dental Pulp, A. O. Hunt. The Evolution of the Bunodont from the Haplodont Forms of Teeth, A. H. Thompson.

Pathology. The Pathological Changes in Pyorrhea Alveolaris, M. L.

Rhein. Oral Manifestations of Syphilitic Infection, illustrated by the Stereopticon, W. C. Barrett.

Surgery, Surgical Treatment of Fractures of the Maxillæ, J. S. Marshall. Antiseptic Surgery of the Face and Mouth, W. H. G. Logan.

Section III. Papers and Essays. Grinding the Natural Teeth for the Purpose of Contouring the Interproximate Space and Improving Point of Contact, L. P. Leonard. Treatment of Root Canals, Jules J. Sarrazin. Treatment of Root Canals, A. E. Webster. Porcelain Inlays, J. E. Wilkinson. Porcelain Inlays, Joseph Head. Papers by C. N. Johnson, E. C. Kirk and E. K. Wedelstaedt; subjects not announced. Some Suggestions in the Treatment of Teeth, A. C. Brewer.

Section III. Clinics. Treatment of Pyorrhea Alveolaris, Howard T. Stewart. Use of Manu-Dynamometer and Gnatho-Dynamometer, G. V. Black. Porcelain Crown and Bridge Work, with Models, H. J. Goslee. Implantation as a Radical Cure for Pyorrhea Alveolaris, Illustrated with Skiographs, Jas. E. Keefe. Cavity Preparation, C. N. Johnson. Gold Inlays, W. V-B. Ames. Method of Combining Cement and Amalgam for Filling Teeth, L. C. Taylor. Jenkins Porcelain for the Production of Buccal Faces of All Gold Crowns, George Evans.

Section II. Dental Education, etc. Our Dental Educational System, M. F. Ault,

News Summary.

M. Y. HART, a dentist of Fredericksburg, Va., died May 13, 1900.

S. W. HOWE, a dentist at North Attleboro, Mass., died May 14, 1900.

W. S. CLARK, of Lagrange, Ill., died at Rockdale, Texas, May 20, 1900.

S. C. BRITTON, 58 years old, a dentist at North East, Ind., died May 4, 1900.

LOUIS BLANKENBURG, a dentist of Chicago, was killed in a quarrel March 19, 1900.

G. W. HOFFMAN, a dentist at Hartford, Vt., was killed by outlaws April 26, 1900.

A P. TODD, a dentist of New York City, 50 years old, died of heart disease May 16, 1900.

D. S. PARKER, a well-known dentist of South Boston, died of pneumonia April 29, 1900.

J. B. NICHOLS, 80 years of age, and a practicing dentist since 1845, died at Potsdam, N. Y., May 8, 1900.

W. T. ARRINGTON, 60 years old, a prominent dentist of Memphis, Tenn., died April 26, 1900, after a week's illness.

O. F. CORMAN, 68 years of age, died at Decatur, Ill., May 2, 1900, where he had been practicing dentistry since 1865.

J. M. BEACH, 87 years old, a dentist at Princeton, Ill., died May 8, 1900. He started practice in Pittsburg, Pa., in 1840.

BE NOT ANGRY with your creditors, if they importune you. It is nobler to forgive and forget them.—*Roche.*

E. C. MCSHERRY, who twenty-five years ago practiced dentistry in Scranton, Pa., died at Frederick City, Md., May 8, 1900.

CARL D. LUDWIG, formerly a dentist at New Orleans, but residing for several years past at Tangipahoa, La., died May 12, 1900.

BIRMINGHAM DENTAL COLLEGE held its annual commencement exercises April 26, 1900, and conferred degrees on ten graduates.

OHIO MEDICAL UNIVERSITY held its annual commencement exercises April 24, 1900, and conferred degrees on forty-two students.

VANDERBILT UNIVERSITY DENTAL DEPARTMENT held its commencement exercises April 27, 1900, and forty-one students were graduated.

C. H. RICHTER, a well-known dentist of Milwaukee, Wis., accidentally shot himself while hunting May 3, 1900, and was instantly killed.

T. L. VANDERBECK, 73 years of age, a dentist at Philadelphia, died May 7, 1900. He started practice in Philadelphia in 1847, but retired five years ago.

A MAN IN CHICAGO died April 25, 1900, and his death is thought to have been due to shock from having several teeth extracted some weeks previous.

INCONSISTENT.—The man who is continually telling you that life isn't worth living is the first one to send for the doctor if he has an ache or pain.

SERIOUS MISTAKE.—The mistake of a doctor is less serious than that of the dentist, because the former fills only six feet while the latter fills an "acher."

BALTIMORE COLLEGE OF DENTAL SURGERY held its sixtieth annual commencement exercises April 30, 1900, and diplomas were awarded seventy-four graduates.

SALT LAKE CITY DENTISTS at their May meeting started a move towards adopting a uniform scale of charges, and it is believed that the measure will go through.

BALTIMORE STATE BOARD OF DENTAL EXAMINERS at a meeting May 8, 1900, elected A. C. McCurdy president and F. F. Drew secretary and treasurer for the ensuing year.

CROWNS IN THE HEREAFTER.—Perhaps the International Tooth Crown Co. would like to collect royalty from every one who hopes to wear a crown in the great hereafter.

COLORADO COLLEGE OF DENTAL SURGERY held its commencement exercises April 25, 1900, and graduated eleven students. The exercises were followed by a banquet.

GEORGIA STATE BOARD OF DENTAL EXAMINERS recently turned down sixteen out of forty-one applicants for licenses, on the ground that they had failed to satisfactorily pass the examinations. The applicants passed resolutions denouncing two members of the board and asking for their removal. There is no appeal, however, from the board's decisions.

LAKE ERIE DENTAL ASSOCIATION at its annual meeting May 1, 1900, elected the following officers: Pres., A. Johnson; V. P., C. R. Brooks; Sec'y, W. E. Van Orsdell; Treas., J. H. Heivley.

WASHINGTON DENTAL EXAMINERS at their meeting May 16, 1900, elected the following officers: Pres. C. A. Darling; Sec'y, W. E. Burkhart; M. D. Thurston, F. W. Rees, C. A. Holmes.

FLORIDA STATE DENTAL ASSOCIATION at its annual meeting May 1-3, 1900, elected the following officers: Pres., W. G. Mason; V. Ps., J. E. Chace, D. D. Beekman; Sec'y and Treas., C. H. Fink.

NIAGARA (N. Y.) FRONTIER DENTAL ASSOCIATION at its April, 1900, meeting elected the following officers: Pres., G. W. Pringle; V. P., D. M. Thompson; Sec'y, A. B. McGee; Treas., J. L. Dudley.

COLUMBUS (O.) DENTAL SOCIETY at its fourth annual meeting April 30, 1900, elected the following officers: Pres., T. R. Chapman; V. P., C. A. Harvey; Sec'y, H. Seamans; Treas., A. V. Ross.

POOR SWISS.—According to a report given in a Swiss Exchange, of 393 operations performed at the dental polyclinic of the University of Zurich, from Aug. 4 to Oct. 22, 1899, 378 were extractions.

OKLAHOMA DENTAL ASSOCIATION at its annual meeting, May 2, 1900, elected the following officers: Pres., E. E. Kirkpatrick; V. P., E. E. Clifford; Sec'y and Treas., A. D. Case; Cor. Sec'y, M. L. McConn.

DELAWARE DENTAL EXAMINERS.—On May 17, 1900, Gov. Tunnell appointed the following dentists as members of the state board of dental examiners: R. C. Jones, C. R. Jefferies, T. H. Gilpin, J. C. Styles.

ILLINOIS SCHOOL OF DENTISTRY held its second annual commencement exercises May 4, 1900, and conferred degrees on twenty-two graduates. The doctorate address was delivered by E. DeWitt Brothers.

LEBANON VALLEY DENTAL ASSOCIATION on May 16, 1900, elected the following officers: Pres., W. D. Delong; V. P., A. S. Koser; Rec. Sec'y, H. J. Herbein; Cor. Sec'y, P. K. Filbert; Treas., B. Wagner.

DETROIT DENTAL SOCIETY at its annual meeting May 14, 1900, elected the following officers: Pres., J. Young; V. P., M. Stafford; Sec'y, C. Burton; Treas., J. S. Hall; Member Board of Censors, J. Collins.

EASTERN INDIANA DENTAL ASSOCIATION at its thirtieth annual meeting, May 1-3, 1900, elected the following officers for the ensuing year: Pres., J. R. Clayton; V. P., H. C. Sexton; Sec'y and Treas., A. T. White.

MONTANA STATE BOARD OF DENTAL EXAMINERS at its annual meeting May 7, 1900, elected the following officers for the ensuing year: Pres., G. W. Pelzer; V. P., E. A. Myers; Treas., H. J. Worth; Sec'y, D. J. Wait.

STATE BOARDS ACTIVE.—"Dr." Blair, a traveling dentist of Indiana; C. E. Camp and J. S. Brubacker of West Virginia, J. Rice of Wisconsin, Claud Ferguson of Utah, and H. E. Hickman of Indiana have been arrested by the respective examining boards of those states for practicing dentistry without a license.

NOT NECESSARILY SLANDEROUS.—An accusation of the use of morphin, the court of civil appeals of Texas holds, in King vs. Sassaman, is not actionable per se —*Jour. A. M. A.*

OHIO COLLEGE OF DENTAL SURGERY held its fifty-fourth annual commencement exercises May 10, 1900, and conferred degrees on sixty-two graduates. These held a reunion and banquet before the graduating exercises.

NORTHWESTERN UNIVERSITY DENTAL SCHOOL held its annual commencement exercises May 2, 1900, and one hundred and eighty-three students received diplomas. The doctorate address was delivered by Prof. J. Taft.

SOUTHERN WISCONSIN DENTAL ASSOCIATION at its sixth annual meeting May 1, 1900, elected the following officers: Pres., C. T. Peirce; First V. P., G. W. Snyder; Second V. P., A. D. Gropper; Sec'y, J. H. Reed; Treas , W. G. Hales.

WILMINGTON DENTAL MANUFACTURING COMPANY litigation came to an end May 1, 1900, when the receiver was discharged, as the affairs of the company had been cleared up. The settlement with creditors was on a basis of 44%.

TOOTH FOR AN ALIBI.—A dentist in New York City recently testified that he had extracted a tooth in New York for a man accused of post-office robbery in Illinois, on the date of robbery, so that the prisoner could not be the guilty person.

LIBERAL.—We have received three copies of the January issue of a dental journal with a fine cover, three copies of another, and still two copies of another. Circulation is undoubtedly very large and the policy of the management liberal.

HARVARD ODONTOLOGICAL SOCIETY at its January, 1899, meeting elected the following officers: Pres., Dwight M. Clapp; Rec. Sec'y, R. T. Moffatt; Treas., L. F. Bigelow; Editor, H. W. Haley; Ex. Com., J. T. Paul, W. P. Cooke, F. T. Taylor.

FRATERNAL TRIBUNES SUED —W. C. Sensibaugh, a dentist of Port Byron, Ill., has brought a $50,000 damage suit against this order, claiming that during initiation he was so shocked by an electric battery that it has resulted in permanent disability.

LONDON (CONN.) DENTAL SOCIETY at its annual meeting May 1, 1900, elected the following officers: Pres., F. N. Harvey; V. P., J. A. Bentley; Sec'y, C. Brown. The members voted to close their offices on Wednesday afternoons during the summer.

DIED UNDER GAS.—A woman at Cleveland, O., while under the influence of nitrous oxid gas given for extraction of teeth, died May 8, 1900. It is thought that she may have had heart disease. Another woman in Indiana died from the same cause April 25, 1900.

PILLS FOR UNCLE.—Druggist: "Pills, my dear?"
Little Girl: "Yes, please, sir."
Druggist: "Anti-bilious?"
Little Girl: "No, Uncle is.—*Experience.*

DENTISTS TO BE KEPT BUSY.—The government in Schleswig-Holstein, Hamburg, has ordered that the children be instructed in school as to the means to be used for the preservation of their teeth, since the dentists of that province have found that only five per cent have sound teeth.

SIXTH DISTRICT DENTAL SOCIETY (N. Y.) at its thirty-second annual meeting, May 2, 1900, elected the following officers: Pres., M. O. Landon; V. P., F. M. Willis; Sec'y, F. W. McCall; Treas., H. D. Whitmarsh; Censor, E. D. Downs; Delegates to state society, E. B. Joachim, E. D Downs.

SUSQUEHANNA (Pa) DENTAL SOCIETY at its meeting May 2, 1900, elected the following officers: Pres., R. H. Stratton; V. P., B. M. Crary; Rec. Sec'y, T. W. Thomas; Cor. Sec'y, Nellie S. Keiser; Ass't Sec'y, Nellie Carle; Treas., W. H. Hertz; Ex. Com., C. C. Walker, Geo. W. Klump, D. B. Williams.

FORGOT BILLS WITH PAINS.—"Yes," said the benevolent man, "I thank heaven for my happy disposition. I am satisfied with what the day brings forth and quickly forget the pain and trouble that have passed."

"Ah," replied the dentist, "that explains your overlooking my little bill."

TINCTURE OF IODIN STAINS —To remove the stains of tincture of iodin from clothing, towels or napkins, immerse the stained part in sweet milk and let it remain a short time; after which rinse with clear water. By this process every trace of iodin can be removed.—*T. L. Hale.*

CATHARTIC —The elopement some time ago of the Princess Chimay with the gypsy who bore the name of Janos is now followed by the announcement of the forthcoming wedding of the Princess Janos to Count Hunyadi. This conjunction of names is a loose enough combination to move the bowels of compassion.—*Med. Age.*

IN A DILEMMA.—Now that the dental associations of three states have passed resolutions strongly indorsing the Protective Association and the editor of the DIGEST, the Trust editors who have been attacking us are like the bull that was caught in the fence—"They don't know whether to hook in front or kick behind."

HARRIS DENTAL ASSOCIATION of Lancaster, Pa., at its annual meeting May 3, 1900, elected the following officers: Pres., W. H. Lowell; V. P., D. S. Smith; Sec'y, A. W. Rogers; Treas., W. H Trout; Ex. Com., I. Heistand, B. F. Witmer, C. S. Myers; Delegates to state society, C. S. Myers, H. D. Knight, F. A. Zell, O. G. Longenecker.

GROWING.—There were only five large cities in America in 1800. Philadelphia with 66,000 was the largest, the seat of government and the center of wealth and culture. New York was next with 60,000. Baltimore was third with 26,500; Boston fourth with 25,000, and Charleston fifth with 19,000 people.—*May Ladies' Home Journal.*

IRISH VIEW OF DENTISTRY IN THE ARMY.—(*Northwestern Lancet*). Two Irish volunteers were being examined prior to enlistment in the British army in Africa. They were refused on the ground of having bad teeth, whereupon one of them said, "he thought he was going to war to shoot Boers, but he didn't know he had to eat them."

RHINITIS DUE TO TOOTH IN NASAL CAVITY.—Dupuy reports a case of purulent rhinitis, the source of which was finally discovered to be a carious tooth growing in the nasal cavity. The only case in literature which he has found similar to this was that of Tyler, which was a supernumery tooth, while in this case it was a misplaced one.—*Jour. A. M. A.*

COCAIN PARALYZES PATIENT.—A laborer at Sloatsburg, N. Y., while suffering from extreme toothache recently went to a dentist for extraction. Cocain was used and the tooth taken out. The patient was then stricken with paralysis, becoming perfectly helpless. The limbs are still paralyzed, but the physicians believe he will fully recover in a few days.

STERILIZING PARTIALLY DISORGANIZED DENTIN IN DECIDUOUS TEETH.—After securing immunity from invasion of moisture, sterilize with wood creosote, carbolic acid or a eugenol solution of iodoform—preferably the latter. Apply a bit of asbestos paper saturated with the sterilizing solution, and over this an oxysulphate filling.—*L. L. Dunbar, Pacific Dent. Gaz.*

WHEN USING PLASTER PARIS dressing the hands of the operator and assistants are very easily cleansed of the plaster by using a little handful of sugar, moistening it with water, and thoroughly rubbing same into the plaster on the hands. This will disorganize the plaster, and is one of the best remedies for cleansing after using plaster paris.—*Eclectic Med. Jour.*

MECHANICAL ROOT-CANAL CLEANSING.—Apply rubber-dam; drill used only to open mouth of canals. Soak up liquid contents of canal; flood with 20 vol. solution hydrogen peroxid, and gently rake upward with bristle, avoiding piston action. Bubbles of gas form and bring debris to surface. Dry out and repeat until gas ceases to come away.—*John Ackery, Dental Record.*

PENNSYLVANIA COLLEGE OF DENTAL SURGERY held its forty-fourth annual commencement May 2, 1900, and conferred degrees on one hundred and twenty-five graduates, the largest senior class in the history of the institution. The Alumni Association of the above college held its annual dinner April 30, 1900 C. N. Peirce presided, and W. F. Litch and W. H. Trueman responded to toasts.

EIGHTH DISTRICT DENTAL SOCIETY (N. Y.) at its thirty-second annual meeting, April, 1900, elected the following officers for the ensuing year: Pres, J W. Beach; V. P., M. O. Cooley; Sec'y, H. MacDougal; Cor. Sec'y, G. W. Pringle; Treas., L. Meisburger; Librarian, S. A. Freeman; Board of Censors. C. S. Butler, H. S. Boswell, H. A. Barrows, B. Rathbun, H. J. Burkhart.

EASTERN COLLEGE OF PAINLESS DENTISTRY.—This institution, to which we referred on page 313 of the April DIGEST, has been granted a charter by the state of Delaware, and has opened up in Allegheny. Delaware seems to be going New Jersey one better in the matter of open corporation laws. Under the charter granted there is absolutely no limit to the business powers of the "college."

MAGNETIC HEALER IN TROUBLE.—S. A. Weltmer, President, and J. E. Kelly, Secretary, of the American School of Magnetic Healing at Nevada,

Mo., were brought into the U. S. District Court of Missouri on May 7, to answer a charge of using the mails for the purpose of fraud. The last Federal Grand Jury of Kansas City found an indictment against the officials of the school. Let the good work go on.

NEW YORK DENTAL RECORDER.—The issues of this publication from October, 1847, to September, 1850, inclusive, have been presented to the Hartford, Conn., Dental Society by Wm. P. Church of Providence, R. I. The work was edited by C. C. Allen. The April, 1849, issue contains the congressional report on Etherization, and the editor most emphatically gives the honor of discovery to Dr. Horace Wells.

CENSUS AND PEOPLE AWAY FROM HOME DURING JUNE.—So that each section of the country may be properly represented, the Census Office requests that in all cases of contemplated absence the head of the family will communicate with the supervisor of the district in which he lives. He is also requested to leave with some responsible neighbor information in writing regarding his answers to questions which are to be asked.

RARE FORM OF COCAIN INTOXICATION.—Vibert. (*Bul. Med., Paris.*) A tampon moistened with a solution of cocain was placed by a dentist in a right upper molar, in a young man of 20. In about twenty-nine hours the right hand became paralyzed, and aphasia developed, with a few hallucinations. The lower members were not affected. The aphasia subsided in three days and the hemiplegia in eight, but the hand was stiff for a month. —*Jour. A. M. A.*

STAYING QUALITIES.—A horse which is successful as a racer usually possesses good "staying qualities," that is, the ability to stick it out till the end, no matter how long it may be. This quality is what counts in a merchant; he must have the faculty of staying with a good thing till he makes other people see and realize that it is good. To advertise intermittently is as unsatisfactory for the merchant as it would be for the race horse to "break" occasionally on the course.—*Stoves and Hardware Reporter.*

ELECTRIC TREATMENT OF NEURALGIA.—Velasco describes (*Revista de Med. y Cir. of Havana*) several cases of severe neuralgia of the lower jaw, etc., cured in a few seances of galvanization with the positive pole applied to the painful region. In one case the pain was so severe that speaking and mastication were both impossible, swallowing very painful, the escape of saliva from the open mouth continuous. One treatment produced a great improvement and cure was complete in three months.—*Jour. A. M. A.*

ARMY DENTAL BILL.—Under date of April 27, 1900, Dr. Williams Donnally of Washington wrote that the bill providing for dental surgeons in the army was in danger of failing in both houses because opposition arose from unexpected quarters, and also because the senators who were expected to support the bill failed to do so. All members of the profession were urged to write their senators and congressmen and show the necessity of having the bill passed. We presume it is not yet too late for this action to be taken by any dentists who have not already done so.

QUAINT METHOD OF PUNISHING DRUNKENNESS.—According to the *Jour. de med. de Paris*, which cites the *Imparcial* of Madrid, the authorities of the municipality of Seville have put in force an ordinance for shaving the beard and scalp of drunkards appearing in a state of inebriety in the public streets. The drunkards can at least console themselves with the reflection that one such punishment will provide them with a certain period of immunity, during which they can continue to get drunk with impunity. We presume the comedy has been enacted for the benefit of the "Barber of Seville."—*N. Y. Med. Jour.*

WOUNDING OF THE FACIAL NERVE.—Biehl (*Med. Press and Cir.*) showed a young man, aged twenty-two, who received a stab from a knife on the left ear, wounding the facial nerve and producing paralysis of motion in the movements of the face on the same side In addition to this there was jerking of the left angle of the mouth, with loss of sensibility and vasomotor disturbance, which confirm some of the experiments conducted in animals. In chewing, the left side of the face became bathed in perspiration, extending to the nose and lower jaw, while the right side was perfectly dry In taking fluid food, or when amyl nitrite and pilocarpin were injected, this phenomenon was absent.

RELATIONS EXISTING BETWEEN THE NOCTURNAL ENURESIS OF CHILDREN AND ADENOID VEGETATIONS OF THE NASOPHARYNX.—M. Groenbech (*Sem. med.*) found on review of the researches carried on by him since 1895 that in 9.1 per cent of cases of adenoid vegetation there existed clearly a relation between these tumors and incontinence of urine. The same journal calls attention to Dr. Huber's similar investigations, who found the conditions ordinarily present in nervous children, the issue of neurotic families, who presented a dryness of the mouth and lips, extreme thirst, polydipsia, polyuria and incontinence, both diurnal and nocturnal. They were, moreover, anemic, apathetic, and suffered from headaches, palpitation and often from night terrors. The urinary examination gave constantly negative results. —*N. Y. Med. Jour.*

FORMULA FOR MAKING EDITORS runs as follows: "We look into the cradle and behold a male child. At the age of ten he is making more noise with fewer buttons on his pants than any boy in his set; at fifteen he is a devil in a print shop, and acts it pretty well at times on the outside; at twenty-five he is publishing a country newspaper and taking in all manner of roots, barks and herbs in exchange for subscriptions, and he is at the head of every enterprise for the benefit of the village; at thirty-five he is an old and hungry-looking man, with holes in his pockets and the seat of his pants, and has a bald head. At fifty he is a corpse in a pine box, and his assets are two cases of long primer, a "G. Wash." hand-press, and five hundred delinquent subscribers, all of whom line up and march past his coffin and say he was a public-spirited fellow but he couldn't save anything."—*Ex.*

SIMPLE WATER TEST.—Into a ground glass, stoppered, perfectly clean bottle put five ounces of the water to be tested; add ten grains of pure, granulated white sugar. Cork tight and set in a window exposed freely to light,

but not to direct rays of the sun. Do not disturb the bottle and keep the temperature as near 70 degrees F. as possible. If the water contains organic matter, within forty-eight hours an abundance of whitish specks will be seen floating about, and the more organic matter the more specks. In a week or ten days, if the water is very bad, the odor of rancid butter will be noticed on removing the stopper. The little specks will settle to the bottom, where they appear as white, flocculent masses Such water should not be used for potable purposes.—*Iowa Health Bulletin.*

APOMORPHIN AS A HYPNOTIC.—The hypnotic effects of apomorphin are considered by Douglas, who calls attention to the contradictory statement in Potter's Materia Medica as evidence of how the profession has overlooked the most valuable property of the drug; 1-30 gr. hypodermically is the average hypnotic dose, though it varies somewhat according to susceptibility. In many cases still smaller doses will do. Under ordinary circumstances it should be administered when the patient is ready for bed; if it is taken before he may go to sleep while undressing. In delirium this is not necessary. The direct hypnotic action apparently lasts from one to two hours, but often starts the patient to a good night's sleep. There is no possibility of the drug habit being formed, as the drug becomes a vigorous emetic if the dose is increased to 1-10 grain.—*Jour. A. M. A.*

SUPRARENAL EXTRACT IN NASAL SURGERY.—Whitehead (*Lancet*). A watery extract of the dried gland, in the strength of ten grains to the dram, with the addition of twelve grains of hydrochlorate of cocain after filtration, was recommended. The value of this extract for diagnostic purposes was pointed out, the extreme shrinkage in the vascular erectile tissue of the nose resulting after the local application facilitating examination. In operative work the advantages were threefold; first, the greater room afforded by reason of the ischemia; second, the diminished loss of blood; and third, the freedom of the field of operation from hemorrhage. Cases of partial and complete resection of the turbinate bones and removal of polypi and septal spurs were mentioned, and it was noted that there was no severe reaction, excessive postoperative hemorrhage, or delay in the process of repair.

NO COW'S MILK IN JAPAN.—In regard to the absence of cow's milk from Japan and its beneficial consequences Dr. A. S. Ashmead says: "One of the most striking features of that most curious of countries, Japan, is the singular scarcity of domestic animals. Horses and cattle are seen only in cities and on the road as pack animals. The cow in Japan is not wanted for her milk. Being an animal product, milk falls under the general condemnation which excludes everything that has pertained to a living body from the alimentation of man. Thus it happens that as Japan may not use cow's milk the Japanese mothers are compelled by stress of circumstances to suckle their babies themselves. Artificial lactation is altogether unknown. The children are suckled until their sixth year. The great reward which Japan reaps from this mysterious care of motherhood is the absence of rachitism. All observers have referred to the fact, and to the absence of rachitic pelves. I think I am not wrong in saying that the chief and central

source of these great sanitary blessings is the absence of cow's milk.—*Medical Record.*

SENSATION IN TRANSPLANTED SKIN-FLAPS.—Stransky (*Wein. Klin. Woch.*) draws the following conclusions from his investigations on this subject: (1) The sensation of pain is to be separated from tactile sensation and from the sensation of temperature. (2) Sensation in transplanted skin flaps begins at the margin, the tactile being first distinguishable, and the sensation for pain and temperature developing later. (3) With large skin flaps certain areas may remain permanently or for a long time more or less anesthetic, which fact probably depends on a varying nutrition of different parts of the graft during the process of healing. (4) The specific mechanism of sensation is probably transferred ready-made with the flap, and the nerve-end organs (Meisner's and Merkel's tactile bodies) in the graft join the nerves which penetrate into it from the underlying tissue, and continue their former function. This applies more especially to tactile sensation, which nearly always corresponds to the conditions obtaining in the part from which the flap was taken, and not at all to those obtaining in the part to which it is transferred. This rule could not be distinguished clearly in the case of the sensation of pain.

PERMANGANATE OF POTASSIUM AS AN ANTIDOTE.—The powerful oxidizing properties of permanganate of potassium have rendered it valuable as an antiseptic and disinfectant, but its properties as an antidote for various poisons are not so generally known. It has been prescribed with success by Bokai and other physicians in the case of phosphorus, which it transforms into orthophosphoric acid. It has been used by Autail for oxalic and hydrocyanic acids and their salts as well as for strychnin and other vegetable alkaloids. Pyle Koemer has employed it in the case of poisoning by opium, and Lacerda for serpent bites and those of venomous insects, spiders, etc. Several years ago the physician Hugoneng showed its action against atropin, aconitin, caffein, cocainin, etc. In a recent work an Italian physician, Paratore, has remarked its effect upon the vegetable alkaloids such as nicotin and aconitin and also upon the vegetable poison curare. He has studied its action in cases of poisoning by strychnin, comparing it with the usual antidote such as tannin and iodin. As a result of his researches he finds that the permanganate is superior to others, whether employed in direct injection or in cleansing of the stomach.—*Scientific American.*

SECTION III, NATIONAL DENTAL ASSOCIATION.—At the last meeting of the N. D. A. it was decided by Section III to make the work of this section a feature of the meeting. To this end it has been arranged to hold the meetings of this section at such time as will not interfere with the general sessions. *All papers* upon the subjects embraced in this section will be read in these meetings, excepting two or three which from their general interest have been selected by the committee for presentation to the general body. A suitable room will be provided, and the program for each meeting duly announced. Some good papers are promised.

It was further decided to hold clinics. These will comprise operations

upon patients and demonstrations upon casts, models, etc. It is desired that everyone who has anything new, original and helpful will bring or send his appliances, models and illustrations. While new appliances may be shown subject to the provisions of the constitution, nothing can be offered for sale. Suitable provision will be made for the carrying out of these clinics.

Let everyone interested in this section who has anything to offer communicate at once with

THOS. E. WEEKS, Chairman, Dayton Bld'g, Minneapolis; JNO. J. HART, Secretary, 118 West 55th St., N. Y.; or THOS. P. HINMAN, Chairman Clinic Com., Atlanta, Ga.

DEATH OF DR. G. H. CUSHING.

Just at time of going to press we learn that Dr. George H. Cushing died at noon May 25, at Los Angeles, Cal.. He was 72 years old and had practiced in Chicago from 1857 to 1898. A fuller notice will appear next month.

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